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AN INTRODUCTION  
TO THE  
STUDY OF MEDICINE.



# AN INTRODUCTION

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# STUDY OF MEDICINE

TO WHICH IS APPENDED

*A REPORT ON THE  
HOMŒOPATHIC TREATMENT OF ACUTE DISEASES  
IN DR. FLEISCHMANN'S HOSPITAL, VIENNA,  
DURING THE MONTHS OF MAY, JUNE,  
AND JULY 1846.*

BY

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(FOR THE NEW SYDENHAM SOCIETY) OF THE LATE PROFESSOR CASPER'S  
'HANDBOOK OF FORENSIC MEDICINE.'

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TO

DR. JOSEPH SKODA,

PROFESSOR OF CLINICAL MEDICINE IN THE ROYAL AND IMPERIAL  
GENERAL HOSPITAL, VIENNA, ETC. ETC. ETC.

WHOSE ENLIGHTENED SCEPTICISM HAS PROVED  
THE CHIEF BULWARK OF LEGITIMATE MEDICINE,

THIS LITTLE BOOK IS DEDICATED,  
WITH SENTIMENTS OF SINCERE RESPECT,

BY HIS FORMER PUPIL,

THE AUTHOR.



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## PREFACE.

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*Welchen Leser Ich wünsche ? Den unbefangenen.*

GÆTHE.

THERE is not a single chapter in this little work which might not, and ought not—to do the subject justice—to be developed into a volume ; but each volume would require the study and experience of a lifetime to write it with that care and attention to all the parts of the subject which its importance justly demands. In saying this I may seem to condemn myself for my boldness in attempting too much, and for my carelessness in carrying out that attempt. This is, however, not the case. This little work is not, and never was intended to be, exhaustive, but merely suggestive ; it is but the first rude outline of a grand cartoon which many labourers will be required to fill up and make perfect.

The contradictory views in regard to the treatment of the same disease at different times, and

the unseemly manner in which each new notion has been lauded at the expense of its predecessors, is highly derogatory to medicine as a necessary art based upon the science of therapeutics. I have attempted, therefore, to show that these contradictory views in regard to treatment have arisen from partial and limited views of the nature of disease, which, from its very being, must be amenable to many different modes of treatment ; though some of these systems are unquestionably, from their innate nature, more readily productive of injurious results to the organism than others. I have also endeavoured to show that the explanation of the success of these contradictory systems of treatment is to be sought for in the relations which what we call Disease bears to those vital phenomena we are accustomed to term collectively Life, and in the effects which these different kinds of treatment have upon these vital phenomena. Further, that a true understanding of these relations and effects will enable medical men to adapt their treatment to the disease wholly irrespective of any dogmatic views as to type, etc. Because disease is not a destructive entity to be removed or destroyed at all hazards, but a natural process of restoration, which, in accordance with the laws of vitality, may sometimes be cut short, but must

generally be carefully guided to its close. Because disease is but the visible expression of a more intensive and prolonged series of those compensating organic changes which are daily and hourly taking place within our frames ; and the key to the whole science of therapeutics is to be found in the recognition of the means by which life—as living action—is maintained, and the continual aberrations of the natural stimuli in excess or defect are naturally compensated.

This view of the relation of the science of medicine to that of life will be found to result in showing that medicine is by no means so uncertain a science as it has been so often asserted to be ; and I trust I shall have the satisfaction of enabling those who spend their lives in the service of their fellow-men to do so with a better conscience, and more like men possessed of an enlightened judgment, than he of whom D'Alembert says that he ceased from the duties he had performed for thirty years because he was “ wearied of guessing.”

18 LYNEDOCN PLACE, EDINBURGH,

*October 1865.*





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## ERRATA.

Page 45, line 9 from top, *for* "tuer" *read* "tuez."

„ 49, line 3 from bottom, *for* "a paper" *read* "my paper."

„ 54, line 6 from top, *after* "in general" *insert* "than I."

„ 55, line 19 from top, *for* "pneumonia patients" *read* "pneumonic patients."

„ 75, first line, *for* "treat" *read* "trust."

## CHAPTER FIRST.

### INTRODUCTORY.

LECTORI AUCTOR.—*En libellum, mole parvum, gravem materie, nec sine labore natum.*—Preface to BOERHAAVE'S *Aphorisms*.

“MY DEAR BROTHER,

“YOU will learn with very great concern that it is thought right that I should apprise you that our Br. —— is in a very dangerous state.

“ON Wednesday night or Thursday morning he fancied himself ill, and sent for Mr. Wishart, who bled him, but thought it only a bilious attack. On Friday, however, the symptoms became highly inflammatory. He was, in consequence, well blooded with the lancet on Friday, and twice yesterday, besides being cupped and leeches; he had also two blisters on. Last night he had rather a quiet night, but was no better this morning, and was again blooded in the forenoon. Mr. Wishart was, at four o'clock, in hopes that the symptoms were a little more favourable. Dr. Abercromby is also attending.

“Yours truly,

—————”

November 23, 1828.

This, which is an exact copy of a real letter now in my possession, gives a more graphic and striking idea of the nature of medical practice seven-and-thirty years ago than could be otherwise conveyed in many pages of description. Dr. Abercromby's name is a sufficient guarantee for the practice having been quite in accordance with the most advanced system of therapeutics of the day ; but perhaps it may be as well also to mention that Mr. Wishart himself was a practitioner of no mean eminence, well known as an oculist, and as the translator of Scarpa's work upon Diseases of the Eye.

In 1830 Dr. Marshall Hall published a work in which he pointed out the many injurious and even fatal\* effects which sometimes resulted from the excessive employment of venesection as a system of therapeutics, showing also the insidious way in which practitioners might be betrayed into a dangerous recurrence to this remedy, by the relief obtained from many of the uneasy symptoms induced by loss of blood by a recourse to the lancet.† Yet even he says : " In the case of inflammation no one would think of trusting the safety of the patient to any other remedy than bloodletting."‡

I need not multiply quotations to show that this continued to be the prevailing medical belief for many subsequent years. My own revered preceptor, the late Dr. Alison, taught, in 1844, that in the treatment of pneumonia, "uncomplicated and recognised from its commencement, the utmost confidence may be placed

\* *Researches on Loss of Blood*, London 1830, pp. 26, 80, etc.

† *Op. cit.* p. 267.

‡ *Op. cit.* p. 272.

in general bloodletting ;” and that “in such a case duly treated in this way”—by repeated venesections—“the only essential action of the prognosis is the day of the disease when the treatment is commenced ; the remedy being often ineffectual when it is delayed more than two or three days from the decided commencement of the disease.”\* Such, then, was the state of medical opinion in this country in regard to the treatment of inflammation when, in the autumn of 1845, I went to Vienna for the purpose of prosecuting my medical studies in the unusually wide field presented in the large general hospital in that city, the number of patients in which averages between two and three thousand daily, and also for the purpose of investigating the practice of Homœopathy as carried out in the Gumpendorf Hospital there, under the superintendence of Dr. Fleischmann. While engaged in perfecting myself in the use of the stethoscope, under the tuition of Dr. Joseph Skoda, I gradually became aware that I was a spectator of one of the most remarkable experiments in practical medicine ever undertaken, for I found that having reasoned himself into a thorough scepticism as to the utility of all medication, Skoda was giving all his patients an equal chance of attaining either of the only two possible methods of exit from his case—death or recovery—by withholding from them all such active medication as might influence the result. In particular, I found him treating acute inflammatory diseases—such as pneumonia, pleurisy, etc.—without that leeching or general

\* *Outlines of Pathology*, Edin. 1844, p. 280.



bloodletting which I had been taught to consider not as merely useful, but as absolutely necessary for the recovery of the patient. This doctrine had been so thoroughly impressed upon my mind that I shall never forget my horror when I found that it was habitually and entirely ignored by Skoda, whose "patients, in the clinical wards at least, were doomed to sink or swim, by natural efforts, in the cause of science ;"\* nor can I ever forget that patient† whose case first opened my eyes to the possibility of there being some truth in Skoda's axiomatic defence of his practice—that pneumonia was a disease which tended not to dissolution but to resolution, and therefore did not require any active treatment.

Thoroughly interested in this, to me, novel inquiry, I gladly availed myself of the opportunities afforded by the Homœopathic Hospital of obtaining a wider experience of the operations of nature in the cure of disease,

\* *Northern Journal of Medicine*, 1846, p. 55. Extract of a letter dated Vienna, November 4, 1845.

† Referred to in the *Northern Journal of Medicine* (*loc. cit.*), and in the following extract from a letter now lying before me dated Vienna, March 14, 1846 :—"The patient alluded to ultimately recovered. Although, at one time, Skoda's assistant gave him up, Skoda himself never did so, though only a small portion of the top of the left lung remained permeable to air, and the case was also complicated with pleurisy. He suffered very much while the strength of the disease was on him, but when that was over and broken he recovered amazingly quickly." He was a young, strong, plethoric man, and I have never seen a more serious case of pneumonia either as to severity or extent. The whole of the right lung and almost all the left lung were hepatised.

and of comparing the effect of the administration of infinitesimals with those more vulgar placebos employed in Skoda's wards in the General Hospital. The results of my inquiry were embodied in a report which was published in the *British and Foreign Medical Review* for October 1846, at the request of its editor, the late Sir John Forbes. Believing this report to be a record of permanent interest, I have reprinted it in a corrected form as an appendix to this volume.

Naturally very much interested in what I had seen and learned, shortly after my return I read (June 23, 1847) before the Medico-Chirurgical Society of Edinburgh, a short and very imperfect account of Skoda's medical practice, illustrated by tabular statements of the number of cases treated, compiled by myself from his hospital-books, including a series of 392 cases of pneumonia with only 54 deaths (1 death in  $7\frac{1}{4}$ ), while the average hospital mortality, when the cases were treated by venesection, might be reckoned, in Scotland at least, at 1 in 3.\* In conclusion, I stated that though the statistics I had brought forward had been obtained in a foreign country, it must not therefore be concluded that the conclusions to which they led were inapplicable to our own. "On the contrary, there, as here, disease is undergoing a gradual change, and with it men's opinions. I have

\* Statistics of Reid, Peacock, and Bennett appended to the Report of the Managers of the Edinburgh Royal Infirmary, and quoted in the *Edin. Med. and Surg. Journal*, vol. lxxviii. p. 398, and *Edin. Med. Journal*, March 1857, p. 789; of Dr. Thomson, *Edin. Med. and Surg. Jour.* No. 156; and of Dr. Orr, *op. cit.* April 1847.

been told by one of the most talented medical officers of the hospital, Dr. Sigmund, that he had been assured by men in whom he placed implicit confidence that formerly acute diseases bore well, nay required, large bleedings. But he was well assured that now at least the case was altered. Why then continue a practice suited to a different state of matters? There, as here, the older practitioners stand upon their experience and early recollections, and scout the present tendency of medical reform. There, as here, they bleed, and bleed largely, and, I believe, with very tolerable results as to mere recoveries. Indeed Skoda himself has often told me he did not consider his semi-expectant system more conducive to recovery in the mere point of numbers, but that at least as many got well as under other systems, and that much more speedily and with less loss of strength.”\* In the discussion which followed, Dr. JOHN GAIRDNER states that he “was not disposed to agree with Dr. Balfour’s conclusions. . . . Nothing was more certain than that important changes had taken place in the character of acute diseases. . . . Acute pneumonia was formerly more severe and required larger bloodlettings than are usually requisite now. He thought that nothing was better established than the good effects of bloodletting in the acute pneumonia of Edinburgh, whatever might be the case in Vienna. . . . Of the benefits of *early* bloodletting he entertained no doubt whatever; they were positive, immediate, unequivocal, and admitted by almost every

\* *Edin. Med. and Surg. Journal*, vol. lxxviii. p. 403.

physician whose experience and judgment entitle him to consideration ; and if Dr. Balfour, or any one else, could shake his conviction in the truth of this opinion, he would also succeed in producing in his mind a general distrust of medical evidence in all cases of every description, since in no case whatever can we have evidence which is stronger and more satisfactory."

"Dr. BENNETT fully agreed with the remarks of Dr. Gairdner, but attributed much of the change which has latterly occurred in practice to an improved pathology and diagnosis, whereby the nature of diseases was better understood, and their detection rendered more exact. Dr. Balfour had attempted to establish the benefits of a 'do-nothing practice,' from the results of statistics. Medical statistics were altogether fallacious, and undeserving the slightest confidence . . . Dr. Bennett concluded by strongly condemning the system of practice lately sought to be introduced by Dr. Forbes and others, founded upon fallacious statistics, to the exclusion of pathology, diagnosis, and the experience of the most eminent men."\*

The conviction of the great practical value of this mode of treating acute inflammations without blood-letting, to which I had attained during my nine months' sojourn in Vienna, by the careful observation of nearly two hundred cases of pneumonia, besides many other cases of acute disease, enabled me to bear with tolerable equanimity these somewhat severe animadversions ; and as I have long since received an ample *amende honorable*

\* *Edin. Monthly Journal*, Aug. 1847, p. 141.

in the general adoption by my professional brethren of this method of treatment which I had the honour of introducing to their notice,\* this discussion would not now have been noticed but for its bearing upon a controversy which subsequently arose, and to which I am now about to refer.

*Ten years* after the publication of the paper just referred to Dr. Bennett thus wrote :—" *It is admitted* by both parties that the practice of bleeding in acute inflammations has, within a recent period, undergone a great change ; that whereas it was formerly the rule to bleed early, largely, and often repeatedly, now such bleeding is rarely practised, and *is not necessary.*"†

There is no longer any doubt as to *whether* it is right to bleed in inflammations ; the only point in question is *why* this is no longer the case. Two reasons have been assigned for this important change in the therapeutics of inflammation. One party, headed by Dr. Bennett,‡ alleges that an improved method of diagnosis and an advanced knowledge of pathology have enabled us more correctly to ascertain the actual mode of origin and progress of disease, and thus more skilfully to adapt our means to the end sought to be attained, and to eschew all that is dangerous and

\* "To Dr. Balfour we owe the first observations published in this country proving that excessive bleedings are not necessary in the treatment of pneumonia."—*Edin. Med. Journal*, Jan. 1859, p. 679.

† *Edin. Med. Journal*, March 1857, p. 770. The italics are mine.

‡ *Edin. Med. Journal*, March and May 1857.



superfluous ; while Dr. Alison and others\* believe that the type of disease has changed, and that as pneumonia no longer possesses the same virulent and sthenic character as formerly, it no longer requires the same heroic remedies. Now, by referring to the *Transactions of the Edinburgh Medico-Chirurgical Society* as already quoted (p. 5), it will be seen that so long ago as 1847 this theory of a change of type in disease was brought forward by myself as one of the reasons which had been given me in Vienna for this change in the therapeutics of inflammation ; it will also be seen that this change in the character of acute diseases had been supposed to be distinctly recognised as existing in Edinburgh, but was not then thought to warrant any such radical change in treatment as has of late been fathered upon it. On the contrary, Dr. Gairdner, freely acknowledging the existence of this change of type in acute diseases, did not hesitate to declare that any one who could shake his conviction in the benefits to be derived from blood-letting in pneumonia, "would also succeed in producing in his mind a general distrust of medical evidence in all cases of every description."† This opinion was also homologated by Dr. Bennett, who "*fully agreed with the remarks of Dr. Gairdner,*" and who strongly con-

\* Dr. Alison, *Edin. Med. Journal*, March 1856 and May 1857 ; Dr. Watson, London, *Edin. Med. Journal*, June 1857. The former seems to think that the change has taken place gradually during the last fifty years ; the latter supposes the present but an example of many asthenic waves which have from time to time swept over the face of disease.

† *Loc. cit.* p. 7.

demned "the system of practice lately sought to be introduced by Dr. Forbes\* and others, founded upon fallacious statistics,† to the exclusion of pathology, diagnosis, and the experience of the most eminent men:"‡ a statement of considerable importance, inasmuch as it proves that not only was the practice of treating pneumonia without bleeding not originated by Dr. Bennett's pathology,§ but also that in 1847 he himself then stigmatised it as "a do-nothing practice!" We see then—for no unprejudiced person can put any other interpretation upon these recorded facts—that the champions in this controversy have each been claiming an honour which belongs to neither; each party has claimed to be the originator of an enlightened system of medical treatment which was in reality commenced by neither, but which has been adopted by both after its title to confidence had been proved by a successful empiricism.

And if the retrospect of only a few years makes the

\* Author of *Nature and Art in the Cure of Disease*, etc. etc. —a man whose self-sacrificing efforts in the cause of medical truth have deservedly endeared his memory to all who love the truth.

† Dr. Bennett has since given strong evidence of the very high estimate he now places upon these statistics, as well as upon medical statistics generally, as the only means of proving "the superiority of one treatment as compared with another" (vide *Edin. Monthly Jour. of Medical Science*, March 1857, pp. 787, 791, etc., and his most recent pamphlet on *The Restorative Treatment of Pneumonia*, pp. 35, 36, 78).

‡ *Edin. Monthly Journal*, August 1847, p. 142.

§ Dr. Bennett's *Treatise on Inflammation* was published in 1844.

case against these controversialists so strong, its strength and importance are very far from being lessened by taking a more extended survey of the history of medicine. To exhibit this as distinctly as possible, I shall, in the first place, concisely point out the relations subsisting between pathological speculations and therapeutics in general, as well as the therapeutics of inflammation in particular, in so far as its treatment by bloodletting is concerned ; and I shall then, with equal brevity, discuss the question of change of type in disease, in so far at least as it is connected with the change of practice referred to.

In the first place, then, in regard to pathology, we know that those physio-anatomical hypotheses which are so termed are necessary to the existence of medicine as a science—of pathology, as they explain the morbid phenomena observed, in accordance with the actual anatomical knowledge and the prevalent physiological speculations of the age, and thus provide a speculative *εἰδωλον* of the disease, which may be reasoned about and employed in illustrating the various modes of treatment, and it may be in suggesting modifications and improvements in them. But these speculative ideas of the nature of disease have exerted little real influence upon medicine as a science—of therapeutics, and still less upon it as a practical art ; for in these respects medicine has been almost entirely based upon the empirical observation of the actions of remedies. To prove this, I need not go back to those early ages (whence many of our most important modes of treatment date), when

physicians had no knowledge of anatomy, and therefore could not have any fixed principles of physiology or pathology by which they might have been guided in the practice of their art, which must consequently and necessarily have been based solely upon observation and experience, if indeed it had any basis at all, and were not merely the rudest guesswork. I have only to point to the greatest and most recent of medical discoveries—to vaccination, the use of quinine in fevers, and of iron in erysipelas\*—discoveries which have not been the result of any pathological investigations, nor are their actions easily explicable by pathological theories, while they afford striking examples of the importance of

\* Both vaccination and the use of quinine have been claimed by the Homœopathists as examples of the so-called law of *similia similibus curantur*. The experiments of Mr. Ceely of Aylesbury have, however, proved that vaccinia is only variola modified by passing through the body of the cow, and have thus made it certain that the utility of vaccination depends upon that unknown law which renders one attack of certain diseases protective for the rest of life upon a species of isopathy, therefore certainly not upon homœopathy. As for quinine, inasmuch as the antifebrile properties of the drug are “limited to those fevers presenting the character of periodicity” (Christison); and as that is precisely a character never proved to exist in that “febrile state,” acknowledged by many authors (Pereira, etc.), to be sometimes produced by cinchona, and not included among the 1143 symptoms enumerated in the R.A.M.L. (Bd. iii. p. 98), as the result of the provings of cinchona, we may safely conclude that these derive their distinctive value solely from the previous empiric employment of the drug. The use of iron in erysipelas forms another very striking example of the worthlessness of homœopathic provings. It acts apparently, specifically, and “will do, in the majority of cases, what no medicine of any other class

correct observation and of the empirical nature of the medical art. Truly it is well for mankind that they had not to bear their ills uncared for till pathology should be sufficiently advanced to explain the true nature and point out the proper treatment of inflammation, or any other morbid process, a degree of certainty to which pathology has not even yet attained—medical history forbids the supposition. If we glance backwards down the long vista of bygone times, we find that each succeeding age has given birth to ever newer and more advanced pathological theories, according to the advances made in anatomical knowledge influenced by the philosophical speculations of the age originating in the successive discoveries of science ; and thus we have not only the strongest *à priori* reasons for regarding Dr. Bennett's theory of the pathology of inflammation as possibly no nearer to abstract truth than those which

has yet been found to do—namely cut short the disease" (De Morgan in Holmes' *System of Surgery*) ; and this it does "without derivation or evacuation, by acting quietly and secretly on the immediate seat of disease and on no other part" (Henderson, *Homœopathy Fairly Represented*, p. 223—"Characteristics of a Homœopathic Specific"); yet it is absolutely useless in infinitesimal or even small doses, and must be given freely till the system is saturated with it. In severe cases an ounce and a half to two ounces a day will be required (De Morgan). Neither have we stolen it from the homœopathic *Materia Medica*, but have been obliged to stumble on it in our usual so-called hap-hazard manner, as wholly without a clue to its curative powers as if Hahnemann had never been born. The cure of acute rheumatism by the *actea racemosa* is another striking example of the inutility of both pathology and homœopathy as guides to treatment.

have preceded it, but we have also the absolute certainty that it is neither the most recent nor the most advanced theory of the pathology of inflammation, for already the passing bell of the exudation pathology is tolling, ringing in at the same time the birth of the newer and it may be truer pathology of development,\* and so perchance it will ever be : perhaps the poet was prophetically right, even in regard to pathology, when he wrote—

“Forerun thy peers, thy time, and let  
Thy feet, millenniums hence, be set  
In midst of knowledge, dreamed not yet.  
Thou hast not gained a real height,  
Nor art thou nearer to the light,  
Because the scale is infinite.”

It may be so, and yet mankind may be practically none the worse for it, not only because “though our knowledge never rise to certainty, we cannot avoid depending upon such knowledge as we have,”† but also because, notwithstanding the many apparent changes in theories of disease, it is remarkable how little the views of good practitioners in all ages have varied in regard to treatment,‡ or even, what is still more remarkable,

\* Perhaps a better definition for Virchow's doctrine than “cell-pathology,” a term which Bennett also claims for his pathology. The one is a cell-development by what may be called “ordinary generation,” the other by a “generatio equivoca,” which is not more likely to be true in pathology than it is in physiology.

† Abraham Tucker's *Light of Nature*, p. 304.

‡ Cabanis, *Du Degré de certitude de la Médecine*, Paris 1803, p. 112, etc.



in regard to their reasons for that treatment. Thus, if we go back to the days of Erasistratus,\* more than two thousand years ago, and ask him what he thought of the nature of inflammation, and why he objected to its treatment by venesection, we learn that he regarded the arteries as the reservoir of the vital spirits, and the veins as containing the blood, and that whenever any disturbance of the system caused a coagulation of the blood in or around the extremities of the veins and arteries, thereby disturbing the movements of the *pneuma* or vital spirit, and producing a perturbed action of the heart and arteries, he looked upon this as an inflammation, and he objected to venesection because the abstraction of fluid blood from the veins only lessened the strength of the patient without affecting this coagulum, the removal of which he therefore thought ought

\* The grandson of Aristotle "ex filia" (Pliny). He retired from practice to Alexandria, where he became one of the founders of its great anatomical school in the third century before Christ. In physic he was the pupil of Eudoxus, whose master, Chrysippus of Cnidus, was a follower of Pythagoras, and one of the most famous physicians of the day. He himself was reckoned "Hippocrate non inferior," and his medical doctrines "ab avi Aristotelis temporibus usque ad tempora, et post tempora Galeni tota Europa, et Romæ maxime floruit" (Portius Luc. Anton. *Opera Omnia*, Neapoli 1736, vol. i. p. 198). None of his writings are now extant, and his opinions are only to be gathered from fragments contained in the writings of Galen and Cælius Aurelianus. The great and important influence they exerted upon medical practice may be in some measure learned by the virulence with which they are attacked by Galen, who, four hundred years after the death of Erasistratus, thought it necessary to attack them in two separate works, one addressed to Erasistratus himself, and the other to certain Erasistrateans then living at Rome.

to be trusted to the powers of nature, aided by a regulated diet.\* And if on our return down the stream of time we stop for one instant to inquire at Van Helmont† his views of the nature of inflammation and of its treatment, we find that he too regarded inflammation as a coagulation of the blood produced by the conception of acidity, arising in some way in his archæus, but that this coagulation, which is the first step of the formation

\* His physiological views may be very well gathered from the fragments of his writings quoted by Galen, as “*Placet ei arteriam vas esse spiritus, venam autem sanguinis,*” etc. (*Adv. Erasis. eap. iii.*) But the exact nature of his pathological views are more difficult to gather. He himself says—“*Etenim periculo quod ex ednetione sanguinis accedit proximum est illud, quod inflammatio adfert, in quo offerri eibum sane non facile est. At ei qui venæ sectionem expertus est et longi tempore in diem toleravit, periculum imminet ne exolvatur*” (*loc. cit. eap. i.*) In eap. vii. he also speaks strongly of the loss of strength resulting from venesection in inflammation and its injurious consequences, etc. The fact, however, that there is a coagulum (exudation) in inflammation which is unaffected by withdrawing fluid blood from the veins is not mentioned by Galen as one of Erasistratus’ opinions. Very probably it is intentionally omitted to give freer scope for his brilliant special pleading. It is certain, however, that Erasistratus must have been aware of this view, as it was held and published by his grandfather Aristotle (*vide Cælius Aurelianus, 4to, Amstelod. 1709, p. 11*). For my argument it is unimportant which of the two is made to hold this view: I have preferred putting it into the mouth of the grandson. In stating the views of Erasistratus, Portius (*op. cit.*) says: “*Quod si sanguis aliquid condenscatur, et coagularetur in extremis venis, arteriisque et circa confinia earundem, tunc inflammationem fieri existimabam*” (p. 7). “*Verum enim vero, animadvertendum insuper, est ea qui precipitantur, exempli gratia in sanguine, etc., nequaquam evacuari posse per sectam venam*” (p. 72).

† Born at Brussels in 1577; died in 1644.



of an apostema, could neither be prevented by the detraction of blood, nor could it, when once it had occurred, be again evacuated through a vein, while serious injury might arise by depriving the patient of his blood, "wherein dwells life, that is strength."\* So that, even without making much allowance for the vast strides made in anatomy and physiology, as well as in morbid anatomy and pathology, during the last two thousand, or even the last two hundred years, we find there is but very little difference between the opinions expressed then as to the nature and treatment of inflammation, and those expressed in the views held nowadays by Dr. Bennett, when he states that "pneumonia consists of an exudation into the vesicles and tissues of the lung, which coagulates and excludes the air. It is very doubtful whether a large bleeding from the arm can operate upon the stagnant blood in the pulmonary capillaries—that it can directly affect the coagulated exudation is impossible. But lowering the strength and vital power of the individual is directly opposed to the necessary vital changes which the exudation must undergo in order to be removed by cell-growths and disintegration. Hence it is, in my opinion, that the mortality from pneumonia has diminished since large bleedings have been abandoned."†

\* Vide *Ortus Medicinæ*, Amstelod. 1652; *Pleura Furcens*, p. 318: "Huic sequitur, quod facti apostemates in pleuritide, non potest ejusdem cruor per venam sectam evacuari, utcumq; nomen revulsionis aut derivationis in morbi metum, et agrorum delusionem jactitetur" (p. 319).

† *The Present State of the Theory and Practice of Medicine*, Edin. 1855.

It is impossible to read these statements without perceiving how closely they agree ; and we are not only forcibly reminded of the saying of Cabanis, already referred to : “ On peut donc niér que la pratique ait en effet changé d’un siècle à l’autre ; on peut niér que les vues des bons praticiens diffèrent essentiellement ; ” but we are also irresistibly led to the conclusion that “ the greater accuracy with which we can now detect inflammations of the lung,” and “ our better acquaintance with their pathology,”\* could not possibly have had any influence in producing this great improvement in practice—since the origin of this so-called *improvement* is coeval with the origin of medicine itself, and since, from the days of Pythagoras,† downwards to the present time, the practice of treating inflammations without bleeding has never ceased to exist as an actual system of practice, and has but rarely wanted an exponent among the foremost physicians of the day.‡

\* *Ed. Med. Journal*, March 1857, p. 796.

† Perhaps the earliest medical philosopher ; he flourished about the first half of the fifth century before Christ. He objected to bleeding because he regarded the blood as the vital pabulum of the soul, the source of life and strength (*vide* Diog. Laertius, *De Vitis*, etc., Amstelod. 1692).

‡ *Vide* my paper entitled “ Hematophobia ” in the *Ed. Med. Journal* for September 1858, and also in reference to the more ancient physicians (*Portius*, *op. cit.* vol. i. pp. 40, 41). Dr. Christison also states what is very true, that the abandonment of bleeding took place simultaneously in all acute inflammations, not certainly in consequence of an improved diagnosis, “ for there are several internal inflammations whose diagnosis did not make any sensible progress either immediately before, or during, the change in their treatment ” (*Ed. Med. Journal*, Jan. 1858, p. 579).

In attempting to estimate the influence of any supposed change of type in producing that change which is acknowledged to have taken place here in the treatment of inflammatory disease, I am very far from wishing positively to assert that there has never been any such change in the type of disease : it would perhaps be rash to make such an assertion, it would certainly be impossible to prove it ; for what is termed the type or constitution of a disease is a purely hypothetical characteristic, the exact nature of which is deduced mainly from the results of treatment, a matter in which the influence of personal opinion is well known to play no inconsiderable part, and in regard to which, in pitting opinion against opinion, the one has at least an equal chance of being mistaken with the other, although to me indeed it seems more reasonable, when inflammation is found not to be amenable to bloodletting—proportioned to its severity—in all times and places, to say, with Soranus\* of old, who

He might, with equal truth, have said, had it suited his purpose, that the employment of venesection in the treatment of parturition was also abandoned about the same time ; yet, so far as I know, not a word has ever been said as to any change of type in labour !

\* In commenting on the statement of Aesclepiades that “*apud Athenas et urbem Romam phlebotomia vexatos vel pejus acceptos esse pleuriticos ; in Paro vero atque Hellesponto resumptos ac revelatos,*” Soranus declares that he bled his “*pleuritici*” at Rome with the utmost freedom, “*nulla regionum discretione confusi ;*” and he argues that if, as Aesclepiades seemed to think, the change of type was local, it ought to extend to all inflammatory diseases, which Aesclepiades did not hold, for he was prodigal enough of bleeding in diseases which he thought could bear it ; while, if the disease itself was not amenable to bloodletting, this peculiarity ought to extend to all regions, “*in omni regione*

was certainly not sparing of blood, that inflammation is not a disease which ever requires bleeding, though under certain circumstances it may bear it well, rather than be forced to assume in explanation a hypothetical peculiarity in the condition of disease, which is always temporary and often quite local in its character, and the existence of which can neither be proved nor disproved.

If we turn to statistics, in the hope of learning something from them in regard to this assumed property of disease, we find indeed no column for type in our nosological tables, but we trace in every line the arbitrary influence of mere opinion—the publication of Broussais' *Examen* largely augmenting the numbers of enteritis and gastro-enteritis at the expense of Pinel's adynamic fever, precisely as the discovery of Lænnec has latterly increased that of pneumonia to the exclusion of Broussais' gastro-enteritis and other vaguer nosological terms, etc. ;\*

noceri debuit" (*vide* Cæl. Aurel. *op. cit* pp. 131, 132). The Aselepiades referred to is the younger, the chief of the Methodies, who flourished at Rome in the first century before Christ. Soranus was one of the most distinguished of the Methodies, a native of Ephesus, who flourished at Rome during the reigns of Trajan and Adrian, at the end of the first and beginning of the second centuries after Christ. He was the elder of the two of that name. So old a story is this dispute regarding type and treatment !

\* As an illustration of this I may quote the following table of Valleix (*Union Med.* 1849, p. 101), giving a synopsis of the causes of death of the old people in Salpêtrière at Paris :—

	1819-20.	1821-29.	1829-34.	1834-39.
Of adynamic and ataxie fevers . . . . .	111	26	4	0
Of enteritis and gastro-enteritis . . . . .	32	74	?	?
Of pneumonia . . . . .	72	110		256

In this table we see the influence of Pinel's opinion of the

while we also learn that even during the period from 1811 to 1820, when an inflammatory type was supposed to prevail,\* this type is not expressed by any unusually extensive disposition to pneumonia, which does not seem to have occurred, the existence of this type having been deduced solely from the supposed amenableness of the disease at that time to the antiphlogistic system—therefore from the hypothetical results of treatment. This is particularly well shown in the following tabular statement by Gölis of the diseases treated by himself (and it is all the more valuable from the diagnosis having been made all throughout by the same physician) in the Children's Hospital at Vienna† during twenty-three years, commencing in 1796. There were treated—

	Of all diseases.	Pneumonia and Pleuritis.	Percentage to total diseases.
In the Quinquennium from 1796 to 1800	20,193	436	2.15
„ „ „ 1801 „ 1805	23,653	823	3.48
„ „ „ 1806 „ 1810	21,790	676	3.10
„ „ „ 1811 „ 1815	32,604	1018	3.12
„ Quadrennium „ 1816 „ 1819	29,168	762	2.61

From this table we learn that from 1796 to 1819 there

nature of fever holding its ground from 1819 to 1821, while the influence of Broussais' *Examen*, published in 1816, already begins to be felt, and rules from 1820 to 1830; and the influence of Lænnec's discovery, already commencing to make itself felt in 1821, gradually increases until pneumonia becomes finally the most frequent cause of death, completely displacing both fever and gastro-enteritis.

\* Dr. Christison, *Edin. Med. Journal*, January 1858, p. 586, and July 1858, p. 48.

† Gölis, *Diseases of Children*, Vienna 1820, i. *Vide* also

was a rapid increase in the frequency of pneumonia, and from that to 1820 a steady decrease ; that therefore, during a period when an adynamic nervous constitution of disease was supposed to prevail, pneumonia formed 2·9 per cent of all the diseases treated, and where an exquisitely inflammatory type was supposed to rule pneumonia formed only 2·86 per cent of these diseases.

Thus baffled by nosological statistics, we are forced to seek in the results of treatment for some evidence of this fancied change in the constitution of disease, which is supposed to have now rendered bleeding an unnecessary and even dangerous treatment in cases of pneumonia—an opinion of course which presupposes that there has been a time when bleeding largely and freely was not only a useful but a necessary mode of treating that disease—when it was, as our predecessors termed it, a *summum remedium in maximis morbis*. But, alas ! a wide survey of the history of medicine teaches us, that though certain medical men have lauded bloodletting as a great remedy for every ill, and have counted their triumphs by their bleedings, others not less known to fame, and not less entitled to credit, have regarded bloodletting as a source of much evil, and have sought to banish it altogether from practice ; and these two classes of medical men have not succeeded one another as wave after wave of varying type swept over the face of disease, nor has the latter

an admirable paper by Dr. Ziemssen of Berlin on pneumonia in the *Prager Vierteljahrschrift*, 1858, bd. ii.



class—the non-bleeders—only recently arisen, basing their heterodoxy upon the feeble and typhoid manifestations of disease in a worn-out age. No. From the earliest era of medical science there has never been a time where these two classes of practitioners have not existed side by side ; so much so, that at times whole cities have been divided in partizanship between the physician the advocate of bleeding, and the physician its foe.\* The followers of Pythagoras, the Cnidian Chrysippus, and of Erasistratus, objected to bleeding as useless and injurious ; while those of Praxagoras, Herophilus, and Galen regarded it as the most useful of remedies. At Rome, in the second century, the followers of Erasistratus were so numerous and so distinguished that it was personal far more than abstract scientific controversy that prompted Galen to write his two celebrated theses—*De venæ sectione adversus Erasistratum*, and *De venæ sectione adversus Erasistrateos* ;† and neither practice ever wanted distinguished expositors till with the fall of Rome the long night of ignorance settled down on the world. After the re-birth of science we find these two sects still fully represented—Van Helmont and Portius,‡ and Stahl on the one

\* *Œuvres de Borden*, par Richerand, Paris 1818, tom. i. p. 398.

† Portius, *op. cit.*, *Apologia Galeni*, vol. i. p. 131 ; and I may add that his virulence in this controversy was so great that he made Rome too hot to hold him. In four years he had to leave it, and he did not return till sure of imperial patronage and protection.

‡ Porzio, Luc-Antoine, was born at Positano, near Naples,

side,\* with Botalli,† Stoll,‡ and many others on the other, down to the commencement of the present century, when Dumangin of La Charité almost never bled for pneumonia, yet his success was at least equal to that of Corvisart, who bled largely.§ Lænnec thought that he had annihilated the mortality of pneumonia by large doses of tartar emetic at the very time that Gregory thought that large bleedings could alone cope with so formidable a disease ;|| while Bouillaud, then, as

in 1639. He was professor of medicine at Rome in 1672, and at Naples, whither he went in 1711, and where he died in 1723. He was present at the siege of Vienna by the Turks, and wrote a work upon military hygiene, based upon his personal experience, which was highly thought of at the time, and was translated into French in 1744. In his other medical writings, which comprise several lectures and short treatises, as well as a more elaborate work written in the form of a dialogue between Erasistratus, Galen, Van Helmont, and Willis, he has shown himself a man of a highly philosophic mind, and his writings are still well worthy of study for their acuteness and learning; they are perfectly free from all those absurdities and phantasies which disfigure so much of the medical writing of the period.

\* Professor of medicine at Halle in 1694.

† Leonard Botalli, who has given his name to the *trou de Botal* (foramen ovale) in the heart, was physician to Charles IX. and Henry III. of France. He was not more famous for his success in practice than for the boldness and freedom with which he bled (*vide* his *De Curatione per Sanguinis Missionem Liber*, Antver. 1588).

‡ He succeeded De Haen as professor of the practice of medicine at Vienna in 1776, and was the author of *Ratio Medendi*, etc.

§ Lænnec, by Forbes, London 1827, p. 249.

|| Gregory's maxim was, that the danger of a large bleeding was less than that of the disease (Lænnec, *op. cit.* p. 340, note).



now,\* placed implicit confidence in his *coup-sur-coup* method of bleeding; and Alison, fully aware—as his writings show him to be—of the many changes in the epidemic constitution of fever, yet seeing in these no reason to look for any change of type in inflammation, and not recognising, though one of the ablest observers of his day, an important change in the constitution of inflammation which must have existed then if it exist now, taught that in the treatment of pneumonia, “uncomplicated and recognised from its commencement, the utmost confidence may be placed in general bloodletting, which should always be large,” etc.,† at the very time that

Somewhat similar opinions were held by the venesectionists in the days of Van Helmont; and just as we have heard a medical practitioner in former days exclaim on inspecting the body of a patient dead of pneumonia—“Well! I don’t see that anything more could have been done; I bled him as long as his constitution could stand it!” so they too excused themselves: “Si robur exantlatum; deplente chirurgo, succumbat, longa tabe, luctuosoque quotidie spectaculo extinguitur: saltem se exeuset medicus per morbi sævam ac insuetam magnitudinem, quod adhibitis optimis remediis, nihilominus in tabem declinaverit” (*op. cit. Pleura Furens*, p. 322).

\* *Edin. Med. Journal*, March 1857, p. 775. Dr. Bennett there says: “I know from personal experience that M. Bouillaud still pursues the *coup-sur-coup* treatment in acute inflammations in his wards of La Charité Hospital, Paris. On asking him whether he had observed any change in the character of the pulse, or a more typhoid character of the fever in recent times, his reply was emphatically, Certainly not.”

† *Outlines*, p. 280.—When Dr. Alison subsequently lent the support of his great name to the revived theory of a change in the constitution of disease, he brought forward the opinions of several of his medical brethren, which had been communicated to him, in support of this theory, and I cannot resist the tempta-

Skoda taught that pneumonia was a disease tending not so much to dissolution as to resolution, and that rapid restoration to health was best promoted by withholding those heroic remedies generally prescribed, and amongst

tion of quoting a portion of one of these communications for the purpose of showing how much this theory is based upon mere opinion. The writer is a man of large experience, long in practice. He says: "Again, the epidemic of influenza which happened about thirty years ago was of a most decided inflammatory type, many of the cases going on to phrenitis and pneumonia of a very intense nature, and requiring, as I thought, active blood-letting before the disease could be arrested" (*Edin. Med. Jour.* May 1857, p. 974). Now, contrast this statement with the following remarks of one of the ablest and most accurate observers that ever lived, Dr. Graves:—"The wide-spreading epidemic influenza which lately visited the whole of Europe, including the British Isles, was not only truly remarkable, both for the violence of the feverish symptoms and of the local congestions of the chest and heart which accompanied its attack, but likewise for the unexpected relation it was found to bear to all measures of active depletion. I appeal to the profession for their testimony in this matter. I ask whether all our preconceived opinions as to the *à priori* indications for venesection, leeching, and purging, were not found to be contradicted by the effects of these remedies in the epidemic influenza of 1833? The sudden manner in which the disease came on, the great heat of skin, acceleration of the pulse, and the intolerable violence of the headache—together with the oppression of the chest, cough, and wheezing—all encouraged us to the employment of the most active modes of depletion; and yet the result was but little answerable to our expectations, for these means were found to induce an awful prostration of strength, with little or no alleviation of the symptoms. In some who were thus treated recovery was protracted and doubtful, and the strength was not restored for several months" (*Clin. Med.* Dublin 1843, p. 500). Dr. Graves makes this statement in the course of an interesting and able argument in favour of there being such a thing as change in the consti-

them bloodletting.\* Practical experience in the treatment of disease had taught Skoda this, and he had not deduced it from any fancied change in the type of inflammation; but a few years previously he had been almost as staunch a phlebotomist as Hildenbrand himself, professor of clinical medicine in the university of Vienna, and director of the General Hospital there, who wrote: "Princeps omni intuitu, nulloque alio supplementum subsidium in pneumonitide acuta sistit vænesectione, veluti sacra anchora ab omnibus unanimi consensu propugnata practicis" (*Institutiones Practico-Medicæ*, Viennæ 1833, vol. i. p. 651). When I first knew Skoda (1846-47) some of his colleagues still held to the old doctrine, and his nearest neighbour in the hospital bled largely and freely, and was perfectly satisfied with the results obtained, clearly showing that even in Vienna the practice of treating inflammation without bleeding originated solely in empiricism, and was not developed by any reasonings in regard to any very marked change in the constitution of disease. Moreover, the success which during the last sixty years has undoubtedly attended the treatment of acute diseases with homœopathic globules

tution of disease. Could there be possibly any stronger proof than that afforded by the contrasting views just given of one and the same epidemic how much this idea of change of type is based upon mere opinion?

\* Vide Notes, etc., *Edin. Med. and Surg. Journal*, 1847, p. 397. *British and Foreign Med. Rev.* No. xlv. p. 591; No. xlv. p. 609. MM. Biett, Magendie, and Grisolle also treated pneumonia expectantly at and before this time (*vide* Grisolle, *Traité Pratique de la Pneumonie*, Paris 1841, p. 560).

by Hahnemann and his followers, affords a convincing proof of the futility of any argument drawn from the results of treatment, as well as of the inutility of the theory of a change of type to explain the success of the change of treatment ; because it reduces the argument to a dilemma, which is this : Either the homœopathic globules are truly active and energetic remedies, or the partisans of bleeding have been grossly mistaken in the fancied utility of their favourite remedy in inflammations of every type ; for the last sixty years includes the period (1805-20) when the inflammatory type was supposed to culminate, yet we never hear of a time when the globules, in the opinion of homœopathists, failed to do good service, nor of their being more suited to one type of inflammation than to another ; nay more, their very opponents never raised this question, and the whole literature of the controversy \* contains not one word about change of type till the success of the expectant mode of treating inflammations forced venesectionists to seek for some reason for this success more soothing to their intellectual pride than a simple confession of error.

\* Even of that portion of it where it was most likely to be brought forward. I refer to the numerous letters published in the *British and Foreign Medical Review* subsequent to the appearance of Sir John Forbes' admirable paper entitled *Homœopathy, Allopathy, and Young Physic*, in January 1846. Of all the many combatants who then entered the lists—many in favour of a less meddling practice, and some raising their voices loud against excessive trust in nature—NOT ONE has made any mention of any supposed change in the constitution of diseases except Dr. Andrew Combe, who assigns it a very moderate share of influence on practice ; for, referring to the change which dur-

Thus, from the statistics of the various modes of treatment we learn nothing definite as to any real change of type in inflammation ; the only thing that the evidence tends to make quite certain being that venesection is no true remedy for inflammation under any circumstances while it also tends to show that there is strong foundation for the statement of Professor Duncan, that such changes in the constitution of diseases exist “only in the imagination of physicians.”\*

Though thus foiled in our endeavours to ascertain anything definite as to the existence of any peculiar constitution in inflammation which is liable to change with the season or with the mere lapse of time, either from the statistics of its prevalence or of those modes of treatment which have been employed against it, and which have been supposed to vary with the variation in its type, and to have been more or less heroic according to its requirements—that is, according to the intensity of what was called the phlogistic diathesis as manifested in the general severity of the disease, and of its particular symptoms—it is still our duty to inquire upon what reasons those who have supported this theory of change of type have based their opinion ; for ing the previous forty years had to a certain extent taken place in the practice of himself and many other medical men, he accounts for it “partly from changes of atmospheric or other influences affecting the prevailing character of disease, but much more from all parties disregarding nature’s indications and efforts, and acting heterogeneously and without *any* rational principle” (*op. cit.* April 1846).

\* Autenrieth, *Volkskrankheiten in Gross Brit.* Tübingen 1823, p. 17.

medical opinion is always deserving of the respectful attention of medical men, though neither credit nor influence can be accorded to it unless it can be shown to rest upon strong and reasonable probabilities.

In the first century before Christ, Asclepiades,\* who was so fond of energetic treatment that he is stated to have described the practice of the earlier physicians as a *meditatio mortis*, declares that though those affected with pleurisy in the region of the Hellespont were relieved and benefited by bloodletting, yet that those similarly affected in Athens and Rome were much the worse for similar treatment. This he ascribes to some peculiarity in these regions or districts, and this peculiarity, strange to say, did not in his opinion extend to other inflammations in these districts; so that while he treated his "pleuritici," in Rome at least, with copious draughts of wine, he was in the habit of bleeding freely in all other inflammatory attacks. Mercurialis, in commenting upon this, seems to hint that this peculiar relation of pleurisy to phlebotomy was probably due to the unhealthy character of the towns referred to.† Had this been the case, however, this asthenic character would not only have extended to all other inflammations, which we have seen was not the case, in the opinion of Asclepiades at least, but also, it would not be likely to have diminished in intensity from the mere lapse of time; yet we find that about 150 years subse-

\* Cæli Aurelianus, p. 131.

† Mercurialis, *Variar. Lectionum in Medicinæ Scriptoribus*, etc., 4to, Venet. 1588, lib. i. cap. 23, p. 23.



quently Soranus found no difficulty in bleeding his "pleuritici" at Rome with the utmost freedom, "nulla regionum discretione confusi."\* We are forced therefore to conclude that this local change of type, in the opinion of Asclepiades, was either a mere fancy upon his part, utterly without foundation, or that he had fallen upon one of those epidemics of typhus, complicated with pneumonia, usually termed pneumo-typhus, which we know have repeatedly occurred, and which never bear bleeding well. Further, as according to all experience it is extremely unlike that he should never have fallen in with anything in the shape of what he called pleurisy except pneumo-typhus during the course of a long practice at Rome, we are irresistibly led to the conclusion that his idea of a purely regional or local change of type in this disease is merely a hypothesis of his own, unsupported by any facts which could in any measure tend to make it reasonably probable, and therefore quite unworthy of any further consideration in regard to this question.

For many centuries after this various modes of treatment and theories of disease passed, one after the other, like phantasmagoric spectra, across the field of medical practice, but till recent times we hear no more of change of type, either local (regional) or general. Sydenham (1685) is generally quoted as one of the earliest authorities in regard to change of type. But even Dr. Alison, who quotes approvingly his remarks as to the influence of the "*occulta aeris diathesis*" and the

\* Cael. Aurel. p. 132.

“*inexplicabilis temporum ratio*” upon disease, says : “It is perhaps doubtful whether Sydenham’s observations applied only to what at this day would be called epidemic diseases, especially varieties of continued fever, or whether they applied also to some cases at least of sporadic, or what he called stationary diseases, such as pneumonia. In the latter case only are his observations to be regarded as similar to those now under discussion. The varying types and varying modes of fatal termination of epidemics, both of the contagious and the malarious diseases—and also of those which, as I believe, partake at times of the qualities of both—are generally admitted, and, I presume, have been witnessed by us all.”\* Dr. Alison himself here sets aside all arguments drawn from the varying types of fever as irrelevant, and thus simplifying the question restricts it solely to pneumonia, which Sydenham included—as did all the older physicians—under the head of pleurisy. Hear what he (Sydenham) says of this : “True and essential pleurisy, which runs rife under all constitutions of all years, will tolerate a repetition of venesections. When, however, it happens, as it sometimes does, that the proper epidemic fever of the year, from some sudden alteration in the manifest qualities of the atmosphere, deposits the morbid matter of† the lungs or pleura (the fever remaining nevertheless the same)—in such a case I say, that although venesection may be allowed in an extreme form of the symptom in question, the

\* *Edin. Med. Journal*, May 1857, p. 975.

† Obviously a misprint for “on.”



general rule must be, that the bleeding be apportioned to the fever that generates the symptom, rather than to the symptom itself, since it is with the fever that the symptom either stands or falls.”\* Thus Sydenham distinctly and positively excludes pleurisy (inflammation in the chest) from among those diseases which, under unknown and inscrutable atmospheric influences, might differ from “one another like north and south, so that the remedy which would cure a patient at the beginning of a year will kill him perhaps at the close,”† because, while urging caution in the employment of phlebotomy in cases where the essential fever of the year—be it typhus or influenza—is accompanied by a local affection of the chest, he expressly states that “true and essential pleurisy *will tolerate* a repetition of venesection” in all constitutions of all years—that is to say, he expressly asserts that to be true which the advocates of a change of type in inflammation deny, conclusively establishing what was his opinion in this matter.

Heberden, in his excellent *Observations on the Increase and Decrease of Different Diseases*,‡ in which he gives copious extracts from the bills of mortality for the whole of the eighteenth century, makes no mention whatever of inflammation or pneumonia; yet we know, from the writings of Borden and others, that the treatment of pneumonia, etc., varied very greatly during last

\* *Opera*, Sydenham Society's Translation, vol. i. pp. 229, 230.

† *Op. cit.* p. 23.

‡ London 1801.

century. For nearly the entire first half of it emetics and tonics were the order of the day ; then the doctrine of phlogosis arose, and brought in its train a renewal of phlebotomy ; which in its turn died out towards the end of the century, to be again revived in the commencement of this the nineteenth century, and again to cease before the middle of it—let us hope for ever—as a *system* at least. Now, had these variations in treatment been caused by any marked change in the frequency or in the constitution of inflammation, there is every reason to suppose that so careful and accurate an observer as Heberden would have been certain to make some mention of it ; and as he has not done so we have equally good reason to conclude that no very evident change in the frequency or in the constitution of inflammation did occur during the eighteenth century, notwithstanding the many changes in its treatment.

Towards the end of last century we have the first positive avowal of a belief in a change of type in inflammation, by one Sallaba, a disciple of Stoll. He first attempted to defend the system of his master against the attacks of Herr Wolfstein,\* who rejected bloodletting entirely from the treatment of inflammations and fevers, by translating and annotating Galen's celebrated thesis, *De Venæ Sectione*, etc. ; but finding this not to be sufficient, he boldly attempted to compromise the matter

\* Anmerkungen, etc. *On Bleeding in Man and Animals*, Vienna 1791 ; quoted by Sprengel, *Hist. de la Médecine*, trad. par Jourdan, Paris 1815, t. vi. p. 200.

by declaring both Wolfstein and Stoll to be right, and that the reason why that could be must be sought for in the varying yet constant influence of the season on the epidemic constitution of disease\*—in change of type in short. I have not been able to procure either Wolfstein's or Sallaba's work, but there is nothing in Sprengel's *History of Medicine*, where they are quoted, that tends to show that the statement of Sallaba is anything more than a mere unsupported opinion, disregarded by the men of his time, long since forgotten, and unworthy of any consideration, except in so far as it shows the tendency of medical men to bolster up their theories by rash and unsupported assertions rather than simply cry "Peccavimus." Autenrieth† is the next, and up to quite recent times the latest author who has endeavoured to show the influence of change of type upon all classes of disease. Two statements of his are sufficient to show the value of his contribution to this controversy. The first is the way in which he brings forward the purely hypothetical and indubitably erroneous opinion held by Dr. Clutterbuck, and promulgated by him in 1807, that typhus fever is essentially an inflammation of the brain, as an indication that the general type of disease was then commencing to change;‡ the second is the reason he gives for the medical practitioners of Great Britain being more prone to treat

\* "Baldinger Neues," etc. *New Magazine for Physicians*, vol. xiii. pp. 491, 502, etc.; quoted in Sprengel, *op. cit.* vol. vi. p. 200.

† *Op. cit.*

‡ *Op. cit.* p. 15.

disease actively—especially by bloodletting—than their brethren on the Continent—viz. the inflammatory irritation of the lungs by the marine atmosphere of that island, and also by the excess of oxygen which must be contained in it from its great extent of pasture-land ;\* and as the air is thus better fitted for supporting *combustion*, it must of course be also better fitted for producing *inflammation* ! I commend this hypothesis to the advocates of a change of type, and would advise them to inquire whether the extent of pasture-land has decreased of late ! Autenrieth's other arguments are drawn entirely from the results of practice, a mode of proof which I have already shown to be perfectly fallacious. I have now brought down the history of this opinion as to a change of type in inflammation as a reason for a change in its treatment to our own times, in which this controversy has assumed a magnitude and an importance to which it has hitherto been a stranger, not more from the distinguished character of the men engaged in it, than from the importance of the interests at stake ; for if it be once granted that the present successful treatment of pneumonia without bleeding is only due to the prevalence of an asthenic type of that disease, then we have no safeguard that another Galen may not arise who, by his forcible and unscrupulous writing, will revive those happy times when “fifty-six ounces”† of blood was reckoned a small bleeding in pneumonia, when a slender young girl was bled to forty-

\* *Op. cit.* pp. 47, 48.

† Mackintosh's *Practice of Physic*, vol. i. p. 362.

eight ounces for *supposed* inflammation of the chest ;\* when one hundred and ninety-two ounces were taken from one individual, who, in consequence, several months afterwards was weak and miserable, and it appeared very doubtful whether he was ever to regain his health ;† when serious injury was frequently inflicted, and even death itself induced, by the actual or comparatively large bleedings considered necessary through misinterpretation of those symptoms which were then thought most strongly to indicate the necessity for repeated venesection—such as the state of the pulse, the state of the breathing (dyspnœa), and the state of the blood (buffy coat),‡ and that even by men whose errors would have remained unheard of had they themselves been less known to fame. When ill at Auvergne, Molière is said to have sent for the village apothecary in preference to a celebrated physician from Chermont, saying : “ No, no ; he’s too great a man for me : bring me the apothecary—he will not dare to kill me.” And from what we read and have heard of the doughty champions of phlebotomy in the days of old, he had some reason for what he said. Gregory states that he bled a man into convulsions, so that some of his pupils rushed terror-stricken from the room ; even the doctor himself was for some minutes disconcerted. § Fortunately the man

\* By Lawrence. Vide *British and Foreign Medico Chirurgical Review*, vol. xxii. p. 35.

† Mackintosh, *loc. cit.*

‡ Vide Mackintosh, *loc. cit.* ; Marshall Hall, *op. cit.* pp. 26, 80, 280, etc.

§ *Additional Memorial to the Managers of the Royal Infirmary*, Edinburgh 1803, pp. 457, 458.

recovered, there is the strongest reason to suppose in spite of his doctor, though the latter complacently takes the credit of it. During my nine months' residence in Vienna, and since my return home, I have seen treated, and have treated myself, without bloodletting, more than 200 cases of pneumonia. I have no record of those seen in the three general wards of Skoda, nor for the first six weeks of my attendance on the Homœopathic Hospital, nor for the last month of his clinical wards; so that I only possess notes of 164 cases, of whom 20 died—12·26 per cent, or 1 in 8·15. Of these, 127 were treated in Skoda's clinical wards, with a mortality of 1 in 7·47, 13·38 per cent; 19 in Fleischmann's Homœopathic Hospital, with a mortality of 3, or 15 per cent; and 18 (I have not included the two cases subsequently related) in my own practice without one single death. A very large proportion of these were very severe cases indeed; and I can truly assert that all those under my own immediate care were well-marked examples of sthenic pneumonia, with flushed and turgid faces, pain and dyspnoea, cough, glutinous rusty expectoration, pungently hot skin, and rapid pulses; and their numbers might have been largely increased, without fatal issue, were I disposed to include cases of bronchitis attended by partial pneumonia (*not pulmonary collapse*), or those slighter cases where there was, I may say, no evidence of pneumonia beyond the local signs of pulmonary crepitation and a slightly quickened pulse; so that all of my former cases would probably even now have been in other hands largely and freely bled, while

some even of those last referred to, whose cases I have altogether excluded, would have been treated energetically. And I say this advisedly, as, since I left the country district in which I formerly practised, I have had occasion to see—during convalescence—a former patient who had been previously restored to health by a few grains of Dover's powder, and who, in what he assured me was a precisely similar attack, had been bled freely—this statement must of course be taken *quantum valeat*—though, as I saw him within a few days of his attack quite free from any local physical signs whatever, there is the strongest reason for supposing that the bleeding was, to say the least, unnecessary. But “does any one believe that it is absolutely of no importance (indifferent) that a sick man is made to submit to a considerable loss of blood which might have been avoided? No man dare maintain such an opinion; it is repugnant to reason.”\* Nay more, it is of importance, and has indubitably cost many lives. Various attempts have been made to represent the amount of this loss in figures, but this is extremely difficult to do, as may well be supposed, from the extreme mobility of all the data concerned. In the *British and Foreign Medico-Chirurgical Review*, vol. xxii. p. 40, Dr. Sibson has tabulated all the modern statistieal evidence which has been brought forward for and against the treatment of pneumonia by bloodletting, and though I have already†

\* Grisolle, *Traité Pratique de la Pneumonie*, Paris 1841, p. 612.

† *Edin. Med. Journal*, November 1858, p. 477; March 1859, p. 860.



objected to some of his data, the table is still valuable as expressing the worst that can be said against the non-bleeding plan, and it amounts to this—that if we bleed we may lose from 1·6 to 50 per cent of our patients, while, if we abstain from bleeding, our mortality will only vary from 1·1 to 40 per cent ; showing a clear gain in favour of the non-bleeding plan of 0·5 to 10 per cent in lives saved alone, wholly irrespective of the time gained by the rapid convalescence under this mode of treatment, and of the no less material saving of strength. I have already pointed out that when I first brought forward proof that pneumonia was more easily and rapidly cured without than with blood-letting, I appealed to the existence of a supposed change of type in disease as a reason why this should be the case. The existence of a supposed change was acknowledged, but it was denied to be any efficient reason for such a diametric change in practice (*vide* p. 6). In process of time the change of practice was brought about, and then a reason was sought for in the previously discarded change of type. The late Dr. Alison\* was indubitably the most successful and the most consistent advocate of this view, and he also brought forward the opinions of very many of his brethren in its favour ; but all of these opinions, when simply stated, amount to this : formerly we bled our patients and they recovered, now we don't bleed our patients and they recover equally well ; therefore the

\* *Edin. Med. Journal*, August 1850, November 1852, March 1856, and May 1857.



type of inflammation must have changed. Dr. Bennett\* has given the *coup de grâce* to this argument by showing that formerly, when bled, one out of every three died of pneumonia ; but now, when they are not bled, only one out of twenty-one die, in Edinburgh at least.

I have already shown the fallacious character of the argument drawn from the results of practice, and the dilemma to which it leads. It is unnecessary to say more on this head here ; only let me point out one other fallacy. Dr. Alison† says that what we now treat is pathological and not nosological pneumonia ; therefore it requires no bleeding. Well, I have already shown that in the Children's Hospital at Vienna, during the height of the supposed prevalence of the inflammatory diathesis, pneumonia formed only 2·86 per cent of all the diseases treated ; nowadays, when we have no inflammatory diathesis, according to the most recent reports of Mauthner and Luzzinsky, it forms not less than 7 per cent. A large proportion of this apparent increase must therefore be purely pathological pneumonia. But bleeding has not therefore been discarded, for Mauthner in 1848 placed his utmost reliance upon bleeding by the lancet, even in children of only two years of age, attaching no importance, in a therapeutic point of view, to the presence or absence of the buffy coat.‡ Thus, in the opinion of some, pneumonia, whether pathological or nosological, is still only amen-

\* *Edin. Med. Journal*, March 1857.

† *Loc. cit.*

‡ Vide *Österreichische Medicinische Wochenschrift*, 1848, No. 13.

able to bloodletting! Further, Dr. Alison asserts that these pathological pneumoniae would have been equally mildly treated, and would have run their course equally successfully, under some other name in former days; and he also, as well as Dr. Christison,\* lays great stress upon the frequency and fulness, but particularly upon the hardness and incompressibility of the pulse, as a diagnostic sign of inflammation, especially in Cullen's days. Now, in the library of the Edinburgh College of Physicians there are no fewer than seven† volumes of clinical lectures by Cullen, comprehending several years and a large number of cases (upwards of two hundred); and I looked carefully over the whole of them to see if I could find a case of typical pneumonia or pleurisy, but I was unable to find one single case; and this was so far satisfactory, as showing that typical pneumonia was quite as rare a disease in Cullen's days as it is now. I did find two, however, which had at first presented symptoms which induced Cullen to think them peripneumonie, the first of which was admitted on the fifth and the other on the ninth day of the disease. In the first he states that the pulse was *neither full nor hard*, and the relief obtained was not remarkable, yet she was bled thrice;‡ in the other case, that of Colin Reid, after stating that peripneu-

\* *Edin. Med. Journal*, July 1858, p. 46.

† There are nine MS. volumes, all said to be clinical lectures. One of these I found to be ordinary lectures upon the practice of physic, and one is a duplicate.

‡ Cullen subsequently acknowledges this to have been a case of simple catarrh, with a *rheumatic stitch* in the side.

monia generally either kills or is incapable of cure after the ninth day, and that he did not suffer from difficulty of breathing, though his pulse was 126, no other characteristic being mentioned, he ordered him to be bled twice on the day of admission, and once on each of the two following days, subsequently giving, in his commentary on the case, reasons for not regarding it as a case of true pneumonia.\* Most of the cases recorded are precisely such as we find in hospital nowadays, except that there are a good many cases of intermittent fever, and of course a large number of inflammatory fever and catarrh; and among these, though the frequency of the pulse is rarely mentioned, and it is very often stated to be soft and not always full—sometimes indeed under 100—yet none escapes the inevitable *bleeding* on two or three days successively after admission, even though this is repeatedly stated to have been upon the ninth or tenth day. Now and then, too, Cullen naïvely congratulates himself upon the case not having turned out nervous fever, in which case, he adds, “*the bleeding would have been pernicious.*” In the library of the London Medical and Chirurgical Society they have several MS. volumes of clinical lectures, both by Cullen and Gregory, in which there are several well-told cases of pneumonia, which are said not to differ from the ordinary run of uncomplicated cases met with in the London hospitals at the present day, none of them being of an intensely in-

\* He regarded it as a fever with inflammatory affection of the bronchial glands (bronchitis ?)

flammatory character, and one at least being of a decidedly low type. He had been bled once before admission, which took place four days after a rigor; he suffered from heat, headache, pain in the right breast, aggravated by coughing, dyspnœa, and expectoration. His pulse was full and *soft*; he was bled five times in two days, and died within forty-eight hours. There was extensive double pneumonia, and turbid greenish serum in the pleura.\* But indeed, though Dr. Alison represents Cullen as stating that the pulse in what he called pneumonia seldom failed to be "*frequent, full, hard, firm, and quick*"—that is, adds Dr. Alison, sharp—yet in his *Systema Nosologicum* Cullen expressly states: "Pneumonia (*peripneumonia*) pulsu non semper duro, aliquando molli;" only in the case of the second species, "*pleuritis*," the "*pulsu duro*" is unqualified. Thus we see that Cullen did acknowledge that the pulse was sometimes soft—that is compressible, for the terms are synonymous—yet this made no difference in the treatment, and that chiefly because he thought (*vide* MS. lectures), basing his opinion chiefly on the results of Lieutaud's dissections (in his *Histcria-Anatomico-Medica*), that if once the blood became coagulated in the parenchyma of the lungs, the disease was then necessarily fatal; therefore, while acknowledging the remedy itself to be dangerous after the third day, pernicious where there was the slightest doubt as to the diagnosis, yet, holding to the old dogma, *Melius*

\* *British and Foreign Medico-Chirurgical Review*, vol. xxii. pp. 32, 33, 34.

*anceps remedium quam nullum*, he did not hesitate to bleed repeatedly after the tenth day, even when he was doubtful as to the diagnosis—too happy to be able in successful cases to point to the result in proof of the correctness of his practice, while all unsuccessful cases were complacently laid to the charge of the disease, which was then thought more dangerous than any remedy.\* Well may Rousseau have exclaimed: “Laissez-moi mourir, mais ne me tue<sup>t</sup> pas.” Happily we know better nowadays. Nay, men knew better even then, when not blinded by their own opinions, which are more apt to deceive than things themselves. Bordeu, in his *Essay on the Mucous Tissue*,† very happily narrates how he was cured of this burning desire to exhibit to astonished assistants and to the patient himself the cause of his disease in a great display of plates and basins, by his having formed while still young the fourth at a consultation in a case of pneumonia where the patient had been already twice bled. A third bleeding was proposed (the consultation was held upon the third day, so this was moderate treatment for these days), but the consultants disagreed. Bordeu had no advice to offer, but he had the pleasure of seeing the patient cured by nature and diet alone, in

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\* Dr. Radcliffe, at the age of sixty, submitted to the loss of 100 ounces of blood, because, though he considered the remedy not safe, he yet thought it not so dangerous as the disease (*vide* Gregory, *op. cit.* p. 459).

† First published in 1767, not more than five or six years before Cullen delivered these lectures, and just the same year as Lieutaud's dissections.

spite of the dreadful warnings of his coming fate uttered *in terrorem* by the three physicians whose mutual disagreement had prevented further treatment. Nay more, he gives a further illustration of the power of nature to cure unaided acute inflammatory disease by relating an interesting anecdote of two physicians of the Montpellier Hospital—Les Serane, père et fils. “The son,” he says, “was a flippant theorist, who knew by heart, and was continually repeating, all the theorems of inflammation, just like those children who are constantly reciting, more or less sillily, *The grasshopper, having sung all summer*, etc.; *Master Corby, perched upon a tree*, etc. Serane père was a clever man, who had been instructed by the first masters. He had been taught to treat inflammation of the chest with tartar emetic; and this he gave in emetic doses at least every second day, with or without the addition of two ounces of manna. This was his great gun. I have seen him fire it off more than a thousand times everywhere and at everything. The son proposed to convert his father, and to bring him into the fashion; that is to say, to make him dread *phlogosis*, *erethism*, and the rupture of the small vessels. The poor father fell into a singular species of indecision. He could no longer prescribe with spirit. Nevertheless, he held firm against bloodletting; but when he came near a patient he muttered to himself, and passed on without prescribing. I have several times seen him, when he desired to give tartar emetic, apostrophise his son with: ‘*Mon fils, m’abès gastat! mon fils, vous m’avez gâté!*’ Never

shall I forget this singular scene. I owe him much, and his patients in the hospital owe him much also. They were cured without being bled, because the elder Serane loved not bleeding ; and without tartar emetic, because the younger Serane had proved to his father that this medicament increases inflammation. The sick were cured, and I profited by the lesson. I concluded that the bleedings, which the younger Serane multiplied when left to himself, were, to say the least, as useless as the repeated emetics to which the elder Serane was so much addicted.”\*

Bordeu points out that Hippocrates, that wise old man of Cos, was well aware of this natural mode of cure, and had clearly traced it out in his writings ; but for doctrines such as this Cullen had the most supreme contempt. Hear what he says on this point : “The general doctrine of *nature curing diseases*—the so-much-vaunted *Hippocratic* method of curing—has often had a very baneful influence on the practice of physic, as either leading physicians into, or continuing them in, a weak and feeble practice, and at the same time superseding or discouraging all the attempts of art.”† A due consideration of the Hippocratic principles could scarcely have had “a baneful influence” on the practice of such energetic physicians, and might possibly have somewhat modified some of those displays of high art in medicine which astonish us not more by the

\* *Op. cit.* tom. ii. p. 793, 794.

† *First Lines*, by Cullen and Gregory, Edinburgh 1829. Authors’ preface.



boldness than by the apparent impunity with which they were practised.

In the library of the Edinburgh Royal College of Physicians there are one volume of clinical lectures, and two volumes of notes of cases taken from clinical lectures by Dr. Gregory, extending over the sessions 1771-72, 1779-80, and 1780-81, and in them I found seven cases of pneumonia, all typical enough of pneumonia as it now occurs, and I suppose always has occurred in hospital, but very far from being typical in the sense of Cullen's nosology. In that one with apparently the most violent symptoms—except two, one of which I shall give in detail, and the other, which is too imperfectly related to be quoted—the pulse was only 100, and of natural strength;\* in the next, a man aged fifty, the pulse is stated to have been 90;† in the third, a man aged twenty-six—an age when we might have expected a high development of the inflammatory diathesis—the pulse on the fourth day of the disease was only 80, and of *natural strength*;‡ in the fourth case—a man aged forty, undergoing a mercurial course for syphilis—the pulse was 96, and *pretty firm*.§ The fifth case was a man aged sixty, who was admitted in the sixth week of his complaint, which had been exacerbated about four days previous to his admission; his pulse was 90, and *weak*; two days subsequently his pulse was only 84, and soft; yet after this he was cupped to the extent of

\* Katherine M'Donald, aged 22.

‡ James Niven.

† Duncan Macorkadale.

§ Daniel Forbes.



six ounces.\* The others were all bled, and had tartar emetic in the regular orthodox fashion ; and from the details of the following case it seems more to have been a lucky chance than anything else which prevented this poor old man from being bled. The sixth case, which was the first to occur in the order of time, is an extremely interesting and instructive one. It is that of Betsy Moffat, admitted on January 3, 1772. She had her first rigor on the 24th of December, and had been bled previous to admission, when she presented the following symptoms : "She was breathing with the utmost difficulty, and there appeared to be a considerable quantity of matter in her breast, which was rustling in her throat, and which she appeared scarce able to throw up. I then diagnosed a peripneumony, or inflammation of the lungs ; and from its having continued several days, I thought it was probable that an effusion had begun to take place in the lungs, and that the chances were much against her. The circumstance of delirium was also extremely unfavourable. That is one of the terminations of peripneumonia. A translation to the head very generally proves fatal."† Nevertheless, Dr. Gregory took eight ounces of blood from her arm ; and finding that she stood this well, he repeated it, purged her well, and gave her a vomit of tartar emetic. Her pulse, which was 134, had fallen on the 5th to 96 ;

\* James Anderson. These cases will all be found detailed in a paper entitled "Cullen and Gregory upon Change of Type in Inflammation," in *Edin. Med. Journal*, September 1865, p. 213.

† *Loc. cit.*

on the 6th her head was leeches on account of throbbing of her temples ; and on the 9th she was dismissed cured. On the 16th of January, however, she was readmitted with a relapse of her former symptoms—her pulse 130. She was treated as formerly, by repeated venesections and tartrate of antimony in emetic doses. On the 18th she was insensible, her pulse 104 and feeble, with a rattle in her throat, like one dying. Even Gregory admitted she could not be further bled ; but after he had stimulated her out of this state with hartshorn and sack-whey, he leeches her head, and subsequently took four more ounces from her arm. The blood, Gregory adds, was still buffy. On the 25th she was again dismissed cured. I confess I am lost in wonder alike at the boldness and the success of this practice—one, however, unquestionably to be avoided, and not imitated.

In the course of his highly interesting clinical lecture upon this case Dr. Gregory distinctly asserts that the pulse “in pneumonia, in the beginning, before the patient is blooded, is not only *soft but small*, but commonly, upon the patient being blooded, it becomes fuller, though it always retains its softness.”\*

I trust, therefore, we shall hear no more of the prevalence of typical pneumonia in the days of Cullen and Gregory, nor of the “*quick, hard, and firm*” pulse, which was theoretically the criterion for bleeding, but one the existence of which is disavowed by Dr. Gregory, and which also seems practically to have been utterly

\* *Loc. cit.*

disregarded. It must also be remembered that all kinds of cases in those days brought forth the inevitable lancet; not only those more or less belonging to the inflammatory diathesis—such as anginas, erysipelas, rheumatism, etc., all of which we can now, by improved modes of treatment, cure much better without it; but even puerperal cases, cases of accident—such as by fall, drowning, etc.—were all likewise treated by bleeding, which we never think of employing in such cases nowadays; so that, if it be absolutely necessary to suppose a change of type in inflammations to explain the success of a non-bleeding system of treatment in them, we ought, by a parity of reasoning, to hold that there is also a change of type in childbirth, in falls, and in drowning, etc. The idea is as reasonable in the one case as in the other; it amounts to a *reductio ad absurdum* in both.

There is still one other point which has been brought forward by Dr. Alison in regard to this matter, on which I have a few words to say;—it is this, that according to Dr. Morehead\* and others,† such a change has taken place in the treatment of disease in the East Indies as Dr. Alison thought could only be accounted for by a change in the type of inflammatory disease similar to what he fancied he had observed here. The works of Twining‡ and Johnson§ contain numerous

\* *Edin. Med. Journal*, May 1857, p. 974.

† *Ibid.* March 1857, p. 775.

‡ *Clinical Illustrations of the Diseases of Bengal*, Calcutta 1832.

§ *The Influence of Tropical Climates on European Constitutions*, London 1818.

illustrations of the active and energetic treatment which in former days was thought necessary to cope with the acute and rapidly fatal diseases of India. How energetic it was, and how unnecessary even in those days, may be gathered from the following narrative of a patient, himself a physician. After stating that, when away from all friends, and without medicine, he was seized with dysentery while voyaging on the Nile in an open boat ; after a partial recovery he relapsed, and, using nothing but hot fomentations, he finally recovered after about a week's illness, and this during continued exposure ; he adds, " During a precisely similar attack in India I got 216 grains of calomel, was bled at the arm, had 50 leeches applied, and used mercurial frictions. In spite of this heroic treatment I recovered, but in such a state as to require six to eight weeks' furlough to recruit."\* Nevertheless, the change of practice, which consists in nowadays avoiding bloodletting in disease, is nothing more than a recurrence to the mode of treatment in vogue among Eastern nations prior to their contamination by the doctrines and practices of Western nations ; for we learn from Portius† that the Japanese never bled, and when the Europeans justified venesection on the plea of thereby moderating the heat of the blood, they were in the habit of replying that to do so they ought rather to introduce more blood, because if you

\* Cumming's *Notes of a Wanderer in Search of Health*, vol. i. pp. 277, 291.

† *Op. cit.* vol. i. p. 51. Portius says—" Audita hæc à Reverendiss. P. Daniele Bartolo Societatis Jesu histor. clarissimo."

took water out of a pot upon the fire you only made what remained boil the faster—a most ingenious and original commentary upon this peculiar pathological doctrine. The Chinese also, according to Barehusen,\* did not bleed in disease, because thereby good blood was taken away as well as bad ; and the blood being the source of life, the more of it was removed the weaker the patient became—opinions which so strongly resemble those formerly prevalent in Europe as almost to suggest the idea that at one period they had been universally predominant. Be this as it may, however, these statements certainly show that acute diseases were formerly treated in the East without bloodletting, just as they now are ; and in the absence of proof to the contrary we are certainly entitled to conclude, from the history of medicine in this part of the world, that the introduction of this branch of the antiphlogistic treatment to India was due to the influence of European opinion, and also that it has neither been more successful nor more requisite in the East† than in the West ; so that the statement of Indian experience referred to is of no value whatever as a proof of there

\* *De Medicinæ Origine et Progressu Dissertationes*, Trajecti ad Rhenum (Utrecht) 1723, p. 333.

† As a further proof of this statement, I may add that in a paper by Dr. Gordon in the *Indian Annals of Medical Science* for April 1855, p. 488, I find a quotation from Dr. Raleigh's work on *Dysentery*, p. 65, in which he states : "Some years since I had the curiosity to examine some of the old diaries of the General Hospital (of Calcutta) from the earliest dates I could decipher," which were as far back as 1797. "These mouldering records prove that the deaths under a treatment of bark

having been any real change in the type of disease either in the East or West, and serves only still further to show the fallacy of any reasoning in regard to this founded only on the results of practice.

No man has a higher respect for the memory of Dr. Alison, or for his opinions in general, but I have a greater respect and a higher esteem for what I believe to be truth, and truth compels me to say that I can find no reasonable ground in the statement of his opinions for believing that there has been any real change of type in acute disease. Dr. Alison has based his views upon what he states to be facts—1st, That inflammation now *very seldom* occurs with *such symptoms* of febrile reaction as Cullen has described as demanding and bearing full bleeding; and 2d, That inflammation is now often attended by typhoid symptoms which contra-indicate bleeding—that is to say, that in such cases the blood wants the firm buffy coat of former days; faintness is brought on by a smaller loss, and there is no encouragement to repeat the bleeding, either from the pulse speedily regaining its strength, or from the speedy recurrence of the local symptoms after temporary abatement. Now I submit that there is no proof to be found in the clinical lectures of Cullen or Gregory that inflammation in the chest differed in any respect in their days from what exists now, or that what may be (the method of extracting its active principle had not then been discovered), opium, porter, wine, brandy, and meat, do not exceed the present one of bleeding and salivation." What a vast change of treatment these statements display! and yet there is not one word as to a change of type.

called typical nosological pneumonia was one whit more prevalent then than it is now. And in regard to the typhoid character of the pneumonia of the present day, I submit that it is not proved to exist by any of the usual characteristics of typhoid pneumonia—such, for instance, as those so well described by Huxham\* as observed by him in the epidemic of 1745-6, in which the pulse was small and feeble, the fever nervous in character, and attended by tremors, subsultus tendinum, and sweatings. There were atrabilious diarrhoea, black tongue, and coma, while the blood-clot was seldom buffy, mostly florid and loose. None of these criteria are present in the pneumonia of our day, while even in our most asthenic cases the pulse is not more slow or feeble than it is described to have been in those cases quoted from Gregory's clinical lectures which he found to be amenable to bloodletting, just as Dr. Chambers of London,† and many other‡ practitioners, both at home and abroad, still find their pneumonia patients even yet capable of enduring venesection. In regard to the other circumstances mentioned by Dr. Alison, it seems to me that ever since medical men discovered that pneumonia was not necessarily a fatal disease even when left to itself, they have been far more chary of putting their patients in any danger by over-active treatment than they formerly were; and though we hesitate to bleed where

\* *On Fevers, Small-pox, and Peripneumonia*, London 1750, p. 179.

† *Vide his Renewal of Life*, London 1862.

‡ A few of these will be found mentioned in the *British and Foreign Medico-Chirurgical Review*, vol. xxii. pp. 16, 36, etc.



faintness is readily brought on, those who rather boasted of bleeding people into convulsions, and actually took more blood from patients just rescued by stimulants from the very brink of the grave, would not be deterred from attempting to jugulate a disease they thought so serious by any such trifling symptom. We have become more refined in our practice as well as in our diagnosis, but this is no proof of any change in the constitution of the disease. Furthermore, Mauthner and Marshall Hall, from opposite points of view, both deprecate any attention being paid to the buffy coat—the one because he regards its absence no contra-indication of bleeding, the other because he regards its presence no certain sign of the necessity for venesection. Dr. Alison himself declares that no indication as to bleeding can be drawn from the intensity of the local symptoms as ascertained by auscultation and the sputa;\* and Dr. Graves, an equally competent observer, declares that the intensity of the fever, as indicated by the heat of skin, the acceleration of the pulse, etc., is equally fallacious as an indication of the necessity for bleeding.† Thus we see that there are no symptoms from which any certain indication can be drawn as to the type or capacity of the disease to bear bloodletting, which can therefore be only ascertained by an experiment productive at the most of but temporary relief, and fraught with a varying amount of certain danger. Dr. Alison,

\* *Op. cit.* May 1857, p. 984.

† *Op. cit.* p. 500. He is speaking of the influenza of 1833, yet these were the signs chiefly relied on as indicating the necessity for bleeding in fevers (*vide* Christison in *Ed. Med. Journal*, 1858).

an admirable example of the liberal conservative in therapeutics, was gradually freeing his mind from the trammels imposed on it by early education and lifelong habit ; and had he been longer spared I do not doubt that he would ultimately have freed himself from this latest of medical delusions, the idea of a changed type in the constitution of inflammations. The gradual progress of his opinions is very well indicated in his published lectures. At first, of course, like almost every one else,\* he entirely disbelieved in the successful treatment of inflammatory disease by the expectant system ; then in 1850 we find him saying : “ We must admit, I think, that this practice has appeared, on fair inquiry, to be more frequently successful in inflammatory diseases than could have been expected—*i.e.* the practitioners who have thought themselves justified by that theory (homœopathy) in trusting more than we do to the provisions of nature, aided only by regimen, for the cure of such diseases, have had fewer deaths and better recoveries than we should have expected.” But, at the same time, in taking notice of another statement made by those practising expectantly, which, he adds, is “ certainly more staggering”—*viz.* that convalescence from inflammatory disease under this plan of treatment is more rapid than under the depleting plan—he adds: “ What we apprehend from a pneu-

\* How strong the disbelief in the powers of nature to cure disease was, may be judged from the fact that a professor of pathology chose rather to yield himself a convert to the powers of infinitesimals than suppose that acute diseases could naturally terminate in health !

monia, met by what we believe to be inadequate treatment, is, not pure exhaustion of the vital power, but such an amount of inflammatory effusion as may either cause rapid death by asphyxia, or lay the foundation of chronic and incurable organic lesion of the lungs, the precise nature of which may vary according to the constitution of the patient ;” and at a later date he says : “ The part of the statements of those witnessing such practice which I was most inclined to distrust was the assertion that the convalescence of the patients thus treated was usually more rapid than that of patients with inflammatory complaints treated by fuller evacuation. But on watching the progress of cases of the kind . . . I have been satisfied that the observation is correct—the absorption of the inflammatory effusion in such cases, even when very extensive, . . . having often been effected with remarkable rapidity, and the subsequent rapid recovery of strength having indicated that the blood, although it must have undergone a change in the course of the inflammation, had quickly recovered its natural properties.”\* The gradual change of opinion indicated in the quotations just given shows that Dr. Alison had by degrees become convinced of two most important points—1st, That blood-letting is *not* absolutely necessary for the cure of acute inflammatory disease ; and 2d, That it is not necessary either for its rapid† or its perfect cure. So decided a change

\* *Edin. Med. Journal*, August 1850, pp. 162, 163. *Ibid.* November 1852, p. 507.

† Cullen, in the MS. lecture already referred to, distinctly

in the opinions of a conscientious medical practitioner, who for a lifetime had held opposite views, coupled with the fact that there is nothing in the history of medicine which tends to show that inflammations have ever varied in their constitutions, though they have indubitably, in all times, and more or less in every case, varied in degree — *variat gradu*, as Cullen says in regard to his *peripneumonice idiopathice simplices*— justify me in stating it as my belief that a little more extended experience of severe pneumonia successfully treated without bloodletting, such as has been repeatedly witnessed by myself and others, would have induced Dr. Alison ultimately to agree that though in certain circumstances bloodletting could be better borne by pneumonic patients than in others, yet it is necessary in none as a curative agent, and only beneficial when undertaken for reasons which can be justified physiologically, apart from all purely speculative pathological ideas.

In a series of very valuable papers upon fevers and inflammations, published in the *Edinburgh Medical Journal* during the year 1858,\* Dr. Christison has stated what he considers to be sufficient reasons for concluding that the change of treatment in inflammations has been mainly due to the attention of practitioners having been, during the preceding forty years, first drawn to a change in the constitution of epidemic

states that bloodletting retards convalescence, and renders the patient extremely sensitive to cold and liable to relapse.

\* January and July 1858.

fevers, and their having been thus led to observe an analogous change in the constitution of the symptomatic fever attending acute inflammations, and to alter their treatment accordingly. The force and reasonableness of this argument depends upon the supposed truth of three subordinate links in the chain of reasoning ; and these are—*first*, That the change of type in epidemic fevers, and in inflammations, has progressed *pari passu* in all of them ; *second*, That there has been a real change of type in epidemic fevers ; and *third*, That this change of type in epidemic fevers, supposing it to be true, has a relevant connection with a change of type in inflammations ; and not one of these statements can be allowed to pass unchallenged. In regard to the first, Dr. Christison himself supplies important evidence as to the prevalence of an asthenic type of measles in 1807-8 alongside of a highly sthenic type of fever in every other class of febrile diseases ;\* while Dr. Alison states, in his clinical lecture of 7th May 1850, “ that the inflammatory epidemic of continued fever observed from 1815 to 1818 was co-existent with a more typhoid form of measles than we have ever seen since ; the eruption in the bad cases of this epidemic having been late, livid, partial, rapidly fading, and attended and followed by stupor, retching, dry tongue, etc. ; such cases being easily depressed by evacuation and obviously benefited by stimulants, and, when the dyspnoea was not very urgent, very often recovering under their use.” That is to say, that while the one epidemic—that of con-

\* July 1853, p. 41.

tinued fever—was supposed to require and to bear bleeding well, the other—that of measles—required the very opposite system of treatment. In regard to this epidemic Dr. Christison states that “Dr. Gregory, in his lectures in midwinter of 1817-18, mentioned that for the first time since 1808 he had seen a few similar cases during that very winter in which antiphlogistic treatment could not be sustained. My own earliest acquaintance with measles, during the summer of the same year, was quite different. Both then, and for many years afterwards, it put on the same sthenic form—evinced by a frequent, strong, incompressible pulse, great heat of skin, and perfect tolerance of bloodletting and other antiphlogistic remedies, which characterised our continued fevers of that period.” Now, whether this statement be another instance of the influence of medical opinion in regard to the existence of a certain type in disease or no, it matters not; because, of course, Dr. Alison must be regarded as a competent witness, and he distinctly states that a sthenic epidemic of fever co-existed with an asthenic epidemic of measles, which is all that is required to be proved. Again, in these latter days we have been afflicted with an epidemic of diphtheria of so asthenic a character as if the very dregs of the vial of asthenia were being poured out upon us, lending an apparent support to the opinion that disease generally has been growing more and more adynamic in its character. But lo! if we look back but a few years in the history of medicine, we find that it is not so long since medical men in this very city—many of whom are



still alive—poured wine into their diphtheritic patients with one hand, while with the other they bled largely and freely those affected with pneumonia.\* These examples are amply sufficient to prove that there has been no gradual and simultaneous declension in the sthenic character of all diseases, and that if—apart from the influence of mere opinion—there has been any real change in the constitution of epidemic diseases, it has occurred *per saltum*, and has affected temporarily now one disease and now another; so that no argument as to the peculiar type of any given disease—even of the same class—can be drawn from the supposed constitution of another; and this holds still more true when it is attempted to extend the application of this argument from one class of diseases to another—from zymotic to sporadic diseases.

Moreover, competent observers believe that any apparent change in the type of what is usually comprehensively termed *continued fever* has been in reality a change in the disease, and that the sthenic fever of 1817-20, which has been termed *synocha* by Dr. Christison, was actually an epidemic of what is now well-

\* This epidemic of diphtheritis prevailed in 1826. It is referred to by Dr. Abercrombie in his *Diseases of the Stomach*, p. 53, and it is fully described as it appeared in Edinburgh by Professor Hamilton in the *Edin. Jour. of Med. Science*, vol. ii. p. 325; and as it appeared in Kelso by Mr. Wm. Robertson in the *Edin. Med. and Surg. Journal*, vol. xxv. p. 279, the latter distinctly mentioning that the uvula, tonsils, velum palati, and œsophagus were in many cases covered with a buff-coloured coat.



known, on account of its distinguishing peculiarity, as *relapsing fever*—a fever which does bear bloodletting at all times, though it is never really benefited by it, while the so-called more asthenic continued fevers of later days have either been epidemics of true typhus, or of typhoid—the *typhus abdominalis* of Continental authors—more commonly known by its synonyms of gastric or enteric fever, it being well known that neither of these fevers ever bears bloodletting well, and that their mortality has been always and at all times much increased whenever it has been practised;\* while, in regard to those other epidemic fevers which are termed *eruptive* from their most distinctive feature, it is unquestionable that their essential characteristic is the poisoning of the system by an animal miasm,† which cannot be evacuated by the lancet, but must be eliminated by its natural excretories; and though, therefore, these fevers may at times bear bloodletting well, this can never be regarded as a curative means of treatment, however much it may modify the symptoms, while it is always more or less hazardous in proportion to the intensity of the poisoning of the system—that is, to the severity of the disease. There are, therefore, the strongest reasons for doubting that there has been any real change of type in *continued fevers*, while what has been termed so in *eruptive fevers* has been in reality merely a more or less intensified development

\* Vide *The Continued Fevers of Great Britain*, by Charles Murchison, M.D., etc., London 1862.

† Vide Graves, *op. cit.* pp. 506, 522, etc.

of the disease, which has thus become more or less intolerant of unnecessary interference, and more or less incapable of being therapeutically played with. There is thus, even on the evidence of those who believe in the reality of a change in the type of disease, in the first place, no reason to believe that this change has been simultaneous and gradual in all fevers and inflammations ; second, there are grave reasons for doubting the existence of any real change of type in epidemic fevers ; and thirdly and lastly, Dr. Alison himself has stated that all arguments drawn from the supposed existence of varying types in epidemic fever are irrelevant when applied to sporadic or stationary diseases, such as pneumonia (*vide antea*, p. 32 ; and also *Edin. Med. Jour.* May 1857, p. 975). The links, then, of Dr. Christison's argument are not only, to say the least of it, doubtfully coherent in themselves, but have no real application to the matter in hand.

From all that I have just related it seems to me unquestionable that there is no reasonable foundation for the medical opinion of there being such a thing as a change in the type or constitutional character of inflammations. Now and then we catch glimpses of facts which seem to justify the idea ; but the more these facts are sifted, the more delusive and visionary this idea is found to be.

Equally unquestionably we owe much of our present knowledge of the powers of nature in the cure of disease, as well as the present revival of the system of treating inflammations without bleeding, to homœopathy,

and we need not hesitate to acknowledge our obligation even to a system of quackery ; for not only, as Leibnitz has wisely said, is “every error but a truth abused—all partial systems but contributions to a perfect science,” but also this is not the only instance in which the medical art has been reminded by quackery of her legitimate duties as the handmaid of nature. A very remarkable and interesting example of this is to be found in the history of the success of the powder of sympathy in the cure of wounds in the early part of the seventeenth century, which was at first ridiculed by all men of sense, till on trial it was found to be actually more successful than those plans which proceeded upon what were then thought to be scientific principles ; and it continued to gain ground in the public estimation until at length some innovator ventured to try the experiment of closing the wound, and keeping it clean and cool without the application of the sympathetic powder to the sword. Wiseman, who wrote about fifty or sixty years after the introduction of this mysterious operation by Sir Kenelm Digby, in describing the importance of keeping the divided parts in union, says : “For here nature will act her part, by the application of blood and nourishment to both sides indifferently, and finish the coalities without your further assistance, and this is that which gives such credit to the sympathetic powder.”\* As surgery in those days, so medicine now has been taught a wholesome lesson by what seemed at first sight to be diametrically opposed to all

\* *Chirurgical Treatises*, London 1705, p. 325.

the rules of science. No new truth was revealed in either case, but old and well-known ones were brought so prominently forward as to ensure them attention after the chaff which obscured them had been blown away by the breath of inquiry. Surgery has never forgot her lesson. Let us hope that medicine will prove equally mindful, and she will never have cause to regret the day when her practice met with such a rebuff, and even her principles seemed to be so rudely shaken. But the principles of medicine are as unchangeably certain as the eternally regular phenomena of nature; because they owe their existence to those relations which naturally subsist between these phenomena—between life and death, health and disease—which of course are unalterably the same in all ages. That there is something in these relations which permits of considerable limits of variation in the treatment of disease, is forced upon our judgment by a due consideration of the widely discrepant medical systems which have from time immemorial prevailed without evident detriment to the human race; and the true mode of ascertaining the exact value of these systems—the key to the whole science of therapeutics—is unquestionably to be found by ascertaining first of all what the relations between health and disease actually are, and how far it is probable that these relations can be modified by treatment. In endeavouring to do this, I would beg to say, in the noble words of a former author, that, “as touching the matter we have in hand, this we ask—that men deem it not to be the setting up of

an opinion, but the performing of a work, and that they receive this as a certainty ; that we are not laying the foundations of any sect or doctrine, but of the profit and dignity of mankind. Furthermore, that being well disposed to what shall advantage themselves, and putting off factions and prejudices, they take common council with us, to the end that being by these our aids and appliances freed and defended from wanderings and impediments, they may lend their hands to the labours which remain to be performed " (*Instaur. Mag.* præf. ad fin.)

## CHAPTER SECOND.

## OF MEDICINE AS AN ART.

*Der Geist der Medicin ist leicht zu fassen ;  
Ihr durchstudirt die gross und kleine Welt,  
Um es am Ende gehn zu lassen,  
Wie's Gott gefällt.*—GÖTHE'S *Faust*.

*I will make a lip at the physician.*—CORIOLANUS.

SYDENHAM, our great English Hippocrates, says : “ I often think that we forget the good rule *Festina lente* ; that we move more quickly than we ought to do ; and that more could be left to nature than we are at present in the habit of leaving to her. To imagine that she always wants the aid of art is an error, and an unlearned error too. If it were so, she would have provided for the human race less than its preservation demands.” This is a view of the subject which has of late years been much insisted upon, and by none more learnedly and eloquently than by the late Sir John Forbes, in his admirable work *On Nature and Art in the Cure of Disease*. It is, however, a view which is specially apt to be pushed beyond its legitimate application, and to be wrested to their own detriment by the unlearned, who, emboldened by such high authority for throwing “physic

to the dogs," hesitate not to send the physician after it. To correct this misconception, it is necessary to remember that both Sydenham and Forbes have applied their censure solely to *perturbative art* in contradistinction to that masterly inactivity which, declining all uncalled-for interference with the operations of nature, yet guides and directs them towards the desired end, and which represents the highest form of art—art fully under the influence of reason.

It is true that the sick are sometimes cured without the aid of a physician, but not therefore without physic. They have done certain things, they have avoided others; if they have regulated themselves by certain rules, these rules have been those of art; if they have blindly trusted themselves to chance, it has only been in so far as they have by chance approximated to the procedure of good medicine that they have been rescued from their danger. In dietetics, as in the use of medicaments, useful or dangerous methods may be followed. Both prove the stability of art; the one injures by its improper employment, the other succeeds by a proper use; but what is proper and what is improper being quite distinct, art must exist, for, if it did not, the destructive and the useful would be confounded.\* But the necessary existence of art in medicine is of itself a proof that nature is not all-powerful in the cure of disease: she can cure, but only under certain conditions and in certain circumstances; while art can change the latter, and modify

\* Hippocrates, *περι τεχνης*. Cabanis, *Du degré de certitude de la Médecine*, Paris 1803, p. 65.



or fulfil the former, and so enable nature to fulfil her part. Suppose that a man has swallowed poison, nature can only cure him on condition that the dose has been too small to be fatal—that is, that its quantity have been sufficiently small in proportion to its activity to admit of its being decomposed in the system, and expelled by the various excretions before its effects have been sufficient to interrupt the natural sequence of the vital phenomena; but art can modify this condition even where the dose has been large enough to prove necessarily fatal if uninterfered with; because it may, in the first place, remove the excess of the poison from the system by the stomach-pump or otherwise; or, in the second place, it may neutralise the poison by an antidote; and besides the common instance of this in the reciprocal action of acids and alkalis, this antidotal neutralisation is perhaps most remarkably exemplified in the action exercised by various narcotic poisons upon one another—belladonna being a direct antidote to the poisonous action of opium, etc.\* or, in the third place, it may obviate the tendency to death, and thus enable the system to get rid of a larger dose of poison than its unaided energies could have disposed of, and the most striking instance of this is to be found in the action of artificial respiration in obviating the tendency to death in cases of narcotic poisoning. Now, without commit-

\* *Vide* an interesting paper on the “Therapeutic Relations of Opium and Belladonna,” by Benjamin Bell, Esq., F.R.C.S.E., in the *Edin. Med. Journal* for July 1858; also a paper in the number for June 1860, by Dr. Thomas Anderson, on “Opium as a Remedy for Poisoning by Datura,” etc. etc.

ting myself to the opinion that the *materies morbi* is in all, or even in most instances a poison, I may employ these three modes of treating poisoning as an illustration of the modes in which art may assist nature in her efforts to restore health to the diseased body. It is but seldom that the first of the methods referred to can be employed in the treatment of disease, because the morbid agency is rarely of such a material character as to admit of its substantive removal from the system, yet in diarrhoea crapulosa, attacks of indigestion, or even occasionally of infantile remittent,\* this mode of treatment is sometimes available. The second of these methods of treatment is most strikingly exemplified in the action of quinine in intermittent fever, of iron in erysipelas, and of the actæa in rheumatism, which all seem to be

\* *Vide* an instance given by Dr. Mackintosh in his *Heads of Lectures on Practice of Physic*, vol. i. p. 89, where a child, aged seven, had a severe attack of gastric or infantile remittent, for which he was leeches, fomented, blistered, and purged, for fourteen days—the child taking no food and but little drink all this time. The stools were slimy and scanty, and it was imagined that little if anything could be remaining in the bowels; nevertheless, something excited the doctor's suspicions, and he proceeded on the fourteenth day to administer castor-oil every two or three hours after a moderate dose of calomel and jalap. His efforts were rewarded by the passage of the *origo mali* in the form of a large fetid stool, containing a *dollar biscuit* softened but undigested, and whole all but a portion of its edge which had been broken off. The depressions generally made on the surface of biscuit were quite distinct, as well as several letters of the baker's name; the stool also contained one large piece of meat and a smaller piece, both undigested and commencing to putrefy. Of course recovery went on well after this delivery.

specific or antidotal, at least as far as our present knowledge of this action goes. But the third mode—the obviating the tendency to death—is that most widely applicable in all diseases both acute and chronic, and is a mode of treatment at once perfectly scientific—because no one but a man of science can know how any given disease tends to produce death—and sure to be attended with safe, and often remarkable, if not brilliant results.\* The treatment, therefore, of those phenomena whose cause is more occult, and which we term disease, and of those others whose cause is palpable poison, being capable of being referred to similar principles, it is manifest that nature, which is confessedly incompetent to the cure of the latter—for no one in his senses, after accidentally swallowing a fatal dose of any poison, would patiently submit to his inevitable fate in nature's hands—is, by a parity of reasoning, also incompetent to the cure of the former set of phenomena which we term disease. It is true

\* Few are content, with Iapis, “*mutas agitare inglorius artes;*” and if brilliancy be sought for rather than safety, patients are at least as much to blame as their doctors; and the self-willed credulity of Naaman the Syrian might easily be paralleled in many curious episodes from the history of quackery. “*Illud etiam insitum est homini, ut cum adhuc non constet, an aliquid faciendum, et administrandum sit, necne; propensior sit ad faciendum, quam ad quiescendum; hinc medici plerique, qui ipsi potius inclarescere, quam ægrotos a morbis vindicare cupiunt; semper aliquid circa illos faciunt: et commendandissent, si ad hoc ea non attingerent, quæ magni momenti sunt, et male administrata perniciam afferent*” (Portius, *De Miss. Sang.* p. 4).

that she can apparently cure both artificial (poisoning) and natural disease ; but when we investigate the conditions necessary for her success, it will be found that in regard to poisoning, as we have already stated, the one condition necessary is, that the dose taken has been insufficient to cause death ; and there can be no doubt that a similar conclusion in regard to the natural cure of disease is perfectly legitimate and correct. It is clear, therefore, that not only is it impossible to escape from art in the treatment of disease ; but, properly employed, art may incontestably be an important and most useful handmaid to nature, at all times alleviating the symptoms and soothing the sufferings of the sickbed, and at least occasionally enabling her to restore to health in cases where her own unaided forces would have failed. But to whom shall we entrust the employment of an art so important for weal or woe ? Shall the sick man prescribe for himself ? Alas ! he knows not the mode of origin of his disease, its natural course, and probable termination ; and his sufferings are so real and present, and the future so dark and uncertain, that he is too prone to grasp at the mere promise of present relief irrespective of its probable future results. Though anxious to escape death, he possesses neither the patience, the mental firmness, nor the knowledgo necessary to guide him in the treatment required. The mind may not waver on its throne, but it is placed in new and untried circumstances, without data to guide its action. The strongest common-sense would not suffice to pilot a storm-tossed bark upon a dangerous

coast without the requisite special knowledge ; and it cannot be that to pilot the frail bark of man's life o'er the stormy ocean of disease requires a knowledge less special, or a mind less firm and clear. Reason forbids it. No ! the sick man cannot apply the resources of art to himself ; he neither knows what these are nor how to employ them ; his bark indeed is tempest-tossed, and strange dangers loom terribly through the mists of doubt and fear which circumscribe his future, but he knows not what these dangers are, nor how he ought to avoid them. Whither, then, shall he flee for succour ? All around him sympathise deeply with his sufferings, and are anxious to aid him ; to whom shall he intrust himself ? If he permit his friends to coddle him with some approved domestic remedy, he but employs the rejectamenta of some extinct pharmacopœia, or follows the exploded theories of some ancient practitioner. Should he hopefully or hopelessly cast himself into the arms of a charlatan—whether he be some superstitious worshipper of the Fetish in medicine who believes in charm, spell, and incantation, though he designates them by some more pretentious title, and illustrates them by perfectly “ modern instances ;” or some equally superstitious Romanist in medicine, who believes in the infallibility of himself and the unfailing efficacy of his own nostrum—he gets art no doubt, but he gets art of the worst kind, and applied in the worst manner ; and the poor sick man is only benefited by chance, and in so far as his treatment has been by chance in unison with the procedure of good medicine. Would it not be

well, then, and reasonable for the sick man to ~~treat~~ *trust* himself unhesitatingly and confidently in the hands of those who have been specially trained in the observation of disease and in the application of art to its cure? In any matter where law is concerned the wise man places himself in the hands of his lawyer, because he knows that though lawyers do err, and that successive courts exist and fatten on their errors, yet he also knows that a man whose whole professional training has been directed for the avoidance of error in these matters is less likely to go wrong than one wholly ignorant of them. So it is in medicine: man is no less liable to err as a physician than in any other position in life, and the follies of rash theorists have cost many cruel and premature deaths, as well as many impaired and debilitated constitutions; nevertheless, the approximative, or what may be called the practical certainties of our art, are sufficient for the welfare and preservation of mankind; were it otherwise, they would long since have ceased to exist. "Though our knowledge never rise to certainty, it does not therefore follow that we may never depend upon such knowledge as we have; knowledge that is absolute certainty was not made for man, but man is so constituted as to do very well without it."\* In everything, as Bishop Butler has it, "probability is the guide of life;" and surely it is consistent with reason that the probabilities of our art should be best administered by those whose education has been specially directed to that end. Yet such is "the

\* Abraham Tucker's *Light of Nature*, pp. 304, 316.



weakness and credulity of men that they will often prefer a mountebank or a witch before a learned physician" (Bacon). And when we consider the blind credulity of the public in medical matters, the wonder is, not that there are so many quacks and impostors, but, on the contrary, that there are still so many upright medical men. No man becomes intuitively possessed of the requisite special knowledge belonging to any of the other arts or sciences, but "at forty," the proverb says, "every man is either a fool or a physician;" and, with that self-complacency which is so general, mankind prefer to consider themselves physicians, forgetting that by thus acting they but render the satire more truthfully applicable. A partial apology for this folly is to be found in the very high estimate which physicians have very properly assigned to the powers of nature, contrasted with the contradictory views of disease, and the antagonistic doctrines of its treatment which they themselves have from time to time propounded. But a correct knowledge of the true relations subsisting between those phenomena termed disease, and those powers which we are accustomed to term the *vis medicatrix naturæ*, or healing powers of nature, teaches us that what we call disease is no entity preying on the human frame—no new force created for the purpose of maiming, tormenting, and ultimately killing miserable man—but is "the product of the body itself, that is, of the vital actions always taking place within it,"\* and is actually not so

\* Forbes *On Nature and Art in Disease*, London 1857, p. 76.



much the expression of the struggles of the organism against an injurious agency, as the manifestation of the restorative energies put forth to repair an injury already received. Disease, therefore, and nature in its character of a curative agent, are identical; and when death, somatic or local (gangrene), interrupts the progress towards its natural termination in health, it is only when the powers of the system have proved unequal to the task of completing the necessary cycle of changes. Therefore we do right to value very highly these powers of nature, because they are our agents in effecting a cure; while we must never forget that art skilfully applied can do much in aid of nature, by removing all obstacles to the successful exercise of her powers, and, if need be, supporting and sustaining them when flagging beneath their task, and thus enabling them to bring it to a prosperous close—by main force, as it were, warping back the bark inevitably drifting on the dark rocks of death. Moreover, though it is impossible to consider that the diverse remedies employed at different times in the same diseases could have been employed indifferently, yet we must not conclude, from the favourable results undoubtedly attained by all, that all are alike useless, since that is impossible, but rather that the vital powers are so constituted as to compensate for that absence of rigorous precision common to all our plans of treatment, and unattainable indeed in any sublunary matter. Nature, like a skilful workman, does the best she can with the means at hand; but it is no less our duty to supply her

with the best attainable, whether we be patients or physicians.

“Wherefore be obedient to thy physician in those things that concern him, if he be a person fit to minister unto thee. God is he only that needs no help, and God hath created the physieian for thine ; therefore use him temperately, without violent confidence, and sweetly, without uncivil distrustings, or refusing his prescriptions upon humours or impotent fear. Physicians are the ministers of God’s mereies and providence in the matter of health, of ease, of restitution, or of death ; and when God shall enable their judgments, or direct their counsels, and prosper their medicines, they shall do thee good ; for which you must give God thanks, and to the physieian the honour of a blessed instrument” (Jeremy Taylor).

## CHAPTER THIRD.

## OF LIFE AND DEATH.

"Upon the whole, there seems to be in man one sentient and intelligent PRINCIPLE, which is equally the source of life, sense, and motion, as of reason."—WHYTT.\*

"Hæc vita discedo, tanquam ex hospitio, non tanquam ex domo. Commorandi enim Natura diversorium nobis, non habitandi locum dedit.—CICERO, *De Senectute*, 96.

THE inquiry into the innate nature of life—the proximate cause of all those wonderful phenomena which distinguish a living body from a dead one—has been a subject of the deepest interest to men in every age. From the earliest dawn of philosophy this inquiry has exercised the ingenuity of the moralist, the divine, and the metaphysician; it could not therefore escape investigation at the hands of the physician, whose daily occupation it is to attempt to modify or to control the phenomena to which the existence of life gives rise. One of our best physicians of last century (Heberden) used to state it as an aphorism to his pupils, that the great desideratum in medical science was the determination of the nature of the vital principle by which all that

\* *Essay on Vital and Other Involuntary Motions of Animals*, 8vo, Edinburgh 1751, p. 290.

goes on in the living body is regulated and governed ; but even if we adopt this view of the vital principle, there can be little doubt that a correct knowledge of what it really is—if it could be ascertained—would be of comparatively little consequence without a correct knowledge of the laws by which it operates ; that it is not therefore “ what the vital principle or power is, but what it does,” that is of importance in medical science, precisely as in cosmical science, the knowledge of the effects of gravity, and the mode in which these act, have proved sufficient for the solution of all cosmical problems, though we can form no idea of what gravity essentially is.

From the imperfection of the English language, the word *life* is made to do double duty, and to signify at one time that influence which modifies all ordinary mechanical and chemical phenomena and transmutes them into vital phenomena—an influence which, though not the result of organisation, is yet in so far a property of it as that organisation may be regarded as its visible result or manifestation, and which was termed by the Greeks  $\Psi\upsilon\chi\eta$ , and by the Romans *Anima* ; while at other times the word *life* is employed to express those living actions by which we recognise the persistence of the influence just referred to, and which were anciently termed collectively *Zωή* and *Vita*—the one being the efficient cause and the other the visible effect. The confusion thus naturally introduced into the subject by the perplexing use of one word with two such different and yet important meanings, has been still

further increased by the very general entertainment of the idea that man alone is possessed of an immortal and never-dying principle, and that this principle is identical with the mind or reasoning powers, and the necessity thus supposed to be created of supplying man with a something distinct at once from matter and from mind, which could be accounted common to him with the brutes, and which should supply the necessary vital powers to the inert matter of their frames. But we must not forget that the existence of an immortal principle or soul is purely a question of morality and faith, not to be determined by its susceptibility of proof so much as by our confidence in the authority on which it rests; and further, that this is a matter wholly foreign to any scientific inquiry as to the nature of life, for the province of faith only begins where that of science ends, the object of the latter being to ascertain and investigate the existence and mode of action of the laws which regulate the natural phenomena of this world, while that of the former is to enable us to realise and apprehend those hopes which have reference to the next; and though it must always be matter of congratulation when faith and science confirm each other, yet we must never allow any preconceived ideas of what is or is not contrary to the former to interfere with the investigations conducted by the latter, resting satisfied with knowing that, as truth in science and truth in revelation have the same author, they must ultimately agree, however widely they may for a time seem to diverge from each other. But our confidence in the truth of

revelation, and the evidence on which it rests, also justifies us in not accepting, as other than temporary and provisional, any conclusion of science evidently contradictory of the doctrines expressly taught by revelation. In investigating the nature of life, therefore, we must, in the first place, exclude all idea of a future state or an immortal spirit, and content ourselves with examining the phenomena of vitality in relation to our present sphere of being, and regarding living action not as life itself, but merely as a proof of the existence of life; for though it is true that life may persist while living action remains in abeyance, yet the existence of life in this state is only hypothetically deduced by our reason from the results of our own experience, and cannot be proved but by the subsequent development of living action.

Physiologists, in conducting this inquiry, have generally proceeded upon the assumption that there are two distinct kinds of life—one belonging to plants and another to animals; but however different the manifestations of living action may be in the higher organisms of each kingdom, they are so similar in the lower tribes of both kingdoms as to lead almost instinctively to the conclusion that the differences in the manifestations referred to depend more upon differences in structure than upon a difference in cause, as of course must be the case when we restrict our inquiry to one—say the animal—kingdom. Thus, no hesitation is felt in ascribing the movements of the ciliated germ of a *Vorticella* to a voluntary principle, because it is—though a low one—still an acknowledged member of

the animal kingdom, the higher members of which undoubtedly possess such a principle, and its possession cannot therefore be well denied to any member of the same kingdom exhibiting precisely similar powers; but the ciliated zoospore of an alga exhibits precisely similar movements, and there is nothing in their character to distinguish the one from the other. It, however, is a plant, or at least a low member of the vegetable kingdom, and "to refer the movements of vegetables to a nervous system, of which no traces can be found, still more to suppose them endowed with consciousness and will, as some have done, is to violate most grossly a well-known rule in philosophy, which cannot be too steadily kept in view in prosecuting physiological inquiry—*non fingere hypotheses*" (Carpenter). To my mind the matter presents itself in a totally different aspect; and, excluding for the present all consideration of a nervous system, which is not possessed by the Protozoa any more than by plants, it seems to me that to ascribe movements which cannot be distinguished in their character from one another, in the one case to the influence of a voluntary principle, and in the other to the mere "action, direct or indirect, of an external stimulus upon a contractile tissue," for no better reason than that the moving body is in the one case a member of the animal kingdom, and in the other of the vegetable one, is indeed "*fingere hypotheses*."

Moreover, though I have selected the example just given because, from the very evident similarity in structure of the germs, the influence of preconceived



ideas in regard to the cause of their movements is rendered more striking, this is by no means the most remarkable mode in which the influence of a conscious voluntary principle is evinced in the vegetable kingdom. I do not at present refer to the movements of the sensitive plant, the *Hedysarum* or the *Dionæa*, which are much more allied to those resulting from muscular irritability than to the ordinary phenomena of plants, and may indeed be reckoned as quite upon a par with the motions of the *Vorticella*, the *Hydra*, and the *Actinia*, as none of these organisms possess any discoverable nervous system. Yet Gosse, in his latest work, *A Year at the Shore*, says : “ The more I study the lower animals, the more firmly I am persuaded of the existence in them of physical faculties—such as consciousness, intelligence, will, and choice—and *that* even in those forms in which as yet no nervous centres have been detected.” Nor do I at present refer to those other phenomena which apparently tend to show the possession by plants of a conscious intelligence, in so far as we cannot walk into the fields without treading upon a multitude of flowers which know much better than we do which way the wind blows, what o’clock it is, and what weather may be expected ; because these facts, however wonderful they appear when thus put into words, may all ultimately be referred to the action of a “ stimulus upon contractile tissue,” and though the perception of an external stimulus\* cannot be regarded

\* “ *Irritatio* is perceptio ”—Glisson, *De Ventriculo et Intestinis*, 1678, p. 239.

as a more purely material act than the perception of an internal one, which volition essentially is, yet there are other phenomena in the vegetable world which are less equivocally the result of the possession of a conscious intelligence, and which cannot apparently be referred to anything else. Thus, if a rose-bush be planted, with dry earth on one side and rich good soil on the other, the roots at first start out all round as usual, but those that begin their journey through poor dust speedily receive mysterious warning of the better land to be found by travelling in the contrary direction, and they all turn back to follow their companions who have gone into the rich pasturage. Again, "at the abbey of Sweetheart in Galloway there is a plane-tree growing on the wall which surrounds the abbey, which, after exhausting the small quantity of soil on its site, stopped from growing for a time, and seemed to unite all its strength in sending down a root to the ground. As soon as this root had established itself in the soil, the tree began again to flourish and increase, till it grew to a considerable size." \* Nay, a still more remarkable instance of the apparently voluntary adaptation of means to an end is to be found in Silliman's *American Journal of Science* for 1840, where we read: "Upon the top of an immense boulder of limestone, some ten or twelve feet in diameter, a sapling elm was found growing. The stone was but slightly embedded

\* Duncan's *Sacred Philosophy of the Seasons*, Edinburgh 1836 — "Winter," p. 127. Dr. Duncan gives numerous other similar instances, all of which he does not hesitate to refer to "the principle of instinct."

in the earth ; several of its sides were raised from four to six feet above the surface, but the top of the rock was rough with crevices, and its surface, which was sloping off on one side to the earth, was covered with a thin mould. From this mould the tree had sprung up, and having thrust its roots into the crevices of the rock, it had succeeded in reaching the height of some twelve or fifteen feet. But about this period the roots on one side became loosened from this attachment, and the tree gradually declined to the opposite side, until its body was in a parallel line with the earth. The roots on the opposite side, having obtained a firmer hold, afforded sufficient nourishment to sustain the plant, although they could not alone retain it in its vertical position. In this condition of things, the tree, as if conscious of its wants, adopted (if the term may be used) an ingenious process, in order to regain its former upright position. One of the most vigorous of the detached roots sent out a branch from its side, which, passing round a projection of the rock, again united with the parent stalk, and thus formed a perfect loop around the projection, which gave to the root an unmovable attachment.

The tree now began to recover from its bent position. Obeying the natural tendencies of all plants to grow erect, and sustained by this root, which increased with unwonted vigour, in a few years it had regained its vertical position, elevated, as no one could doubt who saw it, by the aid of the root which had formed this singular attachment.\* Had it been an animal that

\* Vol. xxxviii. p. 59. When the writer last saw it, it was

had so steadily pursued its end to attainment through all these long years, what a strength of will and tenacity of purpose it would be supposed to indicate ; being only a plant, I am at a loss to what else to ascribe it if not to a species of conscious intelligence, limited certainly in its external manifestations by the absence of organs and occasions, and it may be limited in its very essence. Many other similar instances might be given, but these are sufficient ; though more striking, they are not really more wonderful than those phenomena daily exhibited in the motions by which the radicle constantly seeks the ground or tends downwards, while the plumula shoots into the air, or those by which some of the higher phanerogamous plants twist in spirals around objects near them, and by which all preserve one side of their leaves towards the light—motions which cannot be held to be accidental or merely mechanical acts.

I have been thus particular in pointing out the high probability there is that even plants possess a voluntary principle, and thus that this voluntary principle is co-extensive with the domain of vitality, because this paves the way for the important generalisation that there are but two kingdoms in nature—the organic and the inorganic—the former of which has for its unit the molecule or atom, and for its animating principle, so to speak, probably one definite force which manifests itself, by transmutation, in various forms ;\* while the latter has for its unit no sapling, but a tree fifty feet high and four and a half feet in circumference.

\* *Vide* Grove on *The Correlation of Physical Forces*, 8vo, London 1850.

the cell, and its animating principle, or  $\psi\chi\eta$ , is a definite force possessed of consciousness and will, which is never transmuted, but when it ceases to act merely gives place to those physical forces it has held in check, and which is never observed but as a property propagated from one living organism to another. Every being that possesses life we know to be either a simple cell\* or a congeries of cells. Man that walks upon the earth

“Glist’ring in gold,”

and the long dank grass that battens on his mouldering bones, are alike built up of this elementary organic form ; and if we assume that Life, the Psyche, is also a force common to all, we are enabled to do away not only with Galen’s three spirits—the animal, vital, and natural—but also with the vital principle of the Montpellier school, which, as identical with the *vis medicatrix naturæ* of Hoffman and Cullen, was something distinct and superadded to mere vitality, and yet different from the conscious principle or mind, as we have Dr. Alison’s authority for stating that, “whatever notion we may entertain respecting the existence of a vital principle, it has no connection with our notion respecting the existence of mind.” (*Outlines of Physiology*, p. 3), and to substitute for these *three* unknown principles *one* which is competent to the performance of all their functions. And for this reason I have been careful to

\* Die Zelle is die organische Einheit, das theilbare lebendige Eine (Virchow, *Gesammelteabhandlungen*, Frankfort 1856, p. 22 ; and *Die Cellularpathologie*, Berlin 1859, p. 7).

point out that consciousness and will do apparently exist in the vegetable kingdom, because by thus isolating them from that material agent, the nervous system, with which they are generally found more evidently conjoined, we are enabled to connect them more immediately with the vital force to which they undoubtedly belong, and we also obtain a clearer idea of the nervous system as a great organic development not only for the purpose of co-ordinating the subordinate cell-systems of the body into one organic unity, but also for the purpose of co-ordinating each individual unity in relation to external nature, and therefore only to be found where the structural requirements of the individual render the exercise of one or both of these functions a vital necessity.

If, on the other hand, with some, we regard consciousness and will as not existing in the lower organisms, but as the highest and final development of life,\* we must either consider them as the result of the elaboration of the nervous system—a most materialistic view—or we must regard a part at least (the cerebrum) of the nervous system as developed for the purpose of giving effect to their manifestations. In both instances

\* “Das Bewusstsein ist nicht das Bewegende, sondern das Bewegte; es ist nicht die wirkende Macht im Körper, durch welche der Plan der Organisation, der Zweck des Individuums verwirklicht wird; gerade umgekehrt erscheint es uns als das letzte und höchste Ergebniss des Lebens, als die edelste Frucht der langen Kette ineinander greifender Vorgänge, welche die Geschichte des Individuums ausmachen (Virchow, *Vier Reden über Leben und Kranksein*, Berlin 1862, p. 70).

we still require the existence of an organic force for the development of vitality, a force which in itself is imperishable ; for “if there is a point in natural philosophy which may be regarded as settled, it is the imperishability of the chemical elements and the everlasting duration of force ;”\* while in the one case this “highest and final development” of life must be regarded merely as the result of organisation, a new and higher mode of being of matter perishable as its source, and in the other it must be looked upon as a second imperishable property of life restricted to the higher organisms in which the nervous system is elaborated chiefly, if not solely, for its manifestation, differing from the organic force, and identical with the soul or rational principle. The object sought to be gained by this is to separate and distinguish man from the rest of the animated creation as the sole possessor of a soul, and to do away with the necessity of considering not only other animals but even plants as also possessed of souls, which must be the case if Life, the Psyche, and the Soul—that is the conscious and voluntary principle—be supposed to be identical. And though, in the latter case, we must indubitably consider the souls of plants and the various animals as being of different ranks and grades ; yet, however poetical this idea may be, it detracts somewhat from the selfish dignity with which man has been accustomed to regard himself as the sole inheritor of eternal life.† Be that as it may, however, we do not

\* Draper's *Human Physiology*, New York 1856, p. 548.

† Virchow, *Vier Reden*, p. 82.



get rid of this difficulty by regarding consciousness and will as distinct from Life, the Psyche, and as restricted to the higher organisms ; for it is very well known that very many of the lower animals, which need not be more particularly specified here, present all the phenomena of consciousness, will, and reason, some of them in a very high degree ; and we must either regard all these as mere modes of being of matter, and unprovided with a true soul—which in that case must also be distinct from will, consciousness, and reason—or we must acknowledge that, as there are “such evident indications of even high degrees of reason among the beasts, it is more reasonable to imagine that there may be spirits of a lower order in beasts that have in them a capacity of thinking and choosing ; but that so entirely under the impression of matter (?) that they are not capable of that largeness either of thought or liberty that is necessary to make them capable of good or evil, of rewards or punishments.”\* Thus, even by separating the conscious and voluntary principle from that of Life, we do not get rid of a gradation in souls, though we may restrict them in idea to the higher animals. I cannot, however, see what satisfaction there can be in supposing that only apes, elephants, or dogs share immortality with man, and that this power is not possessed by the lower organisms and by the denizens of the vegetable world, each of which is no less useful in its place in the present creation. We gain nothing in dignity by

\* Bishop Burnet, *Exposition of the Thirty-Nine Articles of the Church of England*, London 1720, p. 34.

any such assumption, while in distinguishing two imperishable<sup>a</sup> forces as residing in the material frame when one is sufficient, we entirely lose sight of that simplicity which ought to be the first object of science ; for, as the immortal Newton has said, “*Causas rerum non plures admitti debere, quam quæ et veræ sint, et earum phænomenis explicandis sufficient.*”<sup>\*</sup>

This unsatisfactory complication of forces is attempted to be forced upon us by those who allow their observation of nature to be warped by their preconceived ideas ; it has no other foundation than one purely ideal. We are told that God, when he first created animal life, said, “Let the waters bring forth abundantly the moving creature that hath life” (ἐξῆντα ψυχῶν ζωῶν), moving creatures possessed of a living psyche—that is a psyche capable of giving rise to Ζωή, or life, as exhibited in living action ; and when man himself was created a similar expression is employed : the Lord God, we are told, formed man of the dust of the ground, and breathed into his nostrils the breath of life—πνοήν ζωῆς—and man became a living soul—ψυχὴν ζῶσαν†—a psyche exhibiting living action. The words employed seem to show that the psyche is similar in both cases ; and though the fact that it was breathed in in the one instance, and merely called into being in the other, may be held to prove a difference, this is no more than can be willingly granted, for

<sup>\*</sup> *Principia*, lib. iii. <sup>a</sup>

† *Septuagint*—Cura Lambertus Bos—Francquaræ 1709. Genesis, i. 20, and ii. 7.

though similar they need not be identical. The granting of the existence of an immortal psyche in animals and plants by no means elevates them to be sharers of man's hopes and aspirations, but at the most amounts to an acknowledgment that in the next world there shall be a similar gradation of created beings as in this—a proposition which may be denied but cannot be disproved, and which is not inconsistent either with the tenor or the words of revelation. While the assumption that the immortal soul is identieal with life, the psyche, though it does reduce the body—the mere material framework—to the degraded position of a mere machine adapted for the requirements of our present position, which must be kept under as much as possible, and whose ultimate destruction is the liberation of the psyche, does not render our present life—that of the body—less real,\* but by substituting the permanent source of life, and thought, and feeling, for the mere phantasmagorie action of a perpetually changing set of material particles† gives a coherence and reality both to the life which now is as well as that which is to come, such as can be attained by no other supposition whatever.

But all this is by the way, and out of the way, for

\* Verlegt man das Leben in die Seele, etc. . . . Das Leben des Körpers ist dann aber nicht das wahre Leben sondern nur ein fremdes, gewissermassen ein Scheinleben, eine Täuschung, eine Maske" (Virchow, *Vier Reden*, p. 81).

† "Life is a permanent influence over a perpetually changing set of particles" (Whewell, *Philos. of the Inductive Sciences*, p. 42).

as scientific investigators we have nothing to do with the next world ; our business in investigating the nature of life is solely to endeavour to ascertain that property of organised matter which is of universal occurrence in this. If this be a force we may rest assured it is, if not life, then closely allied to life. There can be no difficulty in determining that this universally-diffused property which is distinctive of organised matter is a specific susceptibility to the action of a stimulus, for this is to be found prevalent through all the organic world. But susceptibility to the action of a stimulus is not one of those properties by which we recognise the existence of ordinary matter—such as extension, impenetrability, etc. ; on the contrary, it is never found but in connection with *organised* matter ; its results alone and not itself come under the cognisance of the senses ; and further, it is a force because it is a received axiom in physiology that no action takes place within the body that is not accompanied by some change in the affinity of the textures concerned, while every such change is a source of force or motion. In all organised bodies, therefore, we have an immaterial, imperishable force which supplies to matter in a state of organisation that susceptibility by virtue of which it reacts upon the application of a stimulus and produces living action, which must therefore be Life the Psyche, inasmuch as its influence upon organised matter is the source of life the Ζωή. “When the modern inquirer, not content with mere law, seeks the cause of organic phenomena, he cannot dispense with such an active force. As

human intelligence is required to combine and regulate the natural forces which man avails himself of to produce his own works upon the earth, so with all the new-found activity of matter derived from the interchanges of such forces as light, heat, aggregation, affinity, electricity, polarity, gravitation, a psyche is indispensable to direct the order and course of these forces in the development and working of organic bodies. Deduct the effects of all these natural forces in the development and working of organic bodies, and the residual force found to be necessary constitutes the psyche—a force just as essential in a “protoecus” as in the human frame. If it be otherwise sought for it is nowhere else to be met with except in the potentialities existing in the reproductive cells derived from the first parent, or first parents, of every species in the organic world.\*

The susceptibility to the action of a stimulus exists, as I have said, throughout all the organic world, and is the source of living action alike in plants and in animals. The psyche or force, therefore, which imparts this susceptibility to matter—that is, which builds it up into those forms termed organic, and thus places it in a position where it can exhibit it†—is probably similar in all, but not probably identical. If it were

\* “Memoir of the Life and Writings of Robert Whytt,” by Dr. Sellar, from the *Transactions of the Royal Society of Edinburgh*, vol. xxiii. part i. p. 9.

† “The powers, properties, or qualities of a substance are not to be regarded, then, as anything superadded to the substance, or distinct from it. They are only the substance itself,

so, there would be but little difficulty in tracing back the origin of man himself to some wandering and wilful zoosperm, or even still further back to the time when, by enabling the sun's rays to excite in the primary germs of vegetable life the power of decomposing the air and fixing its carbon, water, etc., "a beneficent God," to use the striking expression of Lavoisier, "strewed the surface of the earth first with organised structures, and then with sensation and thought." I need not say how pleasingly plausible to the human intellect such views of the development of the organic world are ; but I must also add, that to suppose that similarity in type of formation and in active forces prevails throughout creation, coupled with an infinite variety of definite and uninterchangeable forms, opens up far grander and nobler views both of creation itself and of the power and wisdom of the Creating Mind.†

Throughout the animal kingdom this susceptibility to the action of a stimulus is most widely diffused and considered in relation to various changes that take place, when it exists in peculiar circumstances (*Inquiry into the Relation of Cause and Effect*, by Thomas Brown, 8vo, Edinburgh 1818, pp. 20, 21).

\* "I cannot repeat too emphatically that there is not a single fact in embryology to justify the assumption that the laws of development, now known to be so precise and definite for every animal, have ever been less so, or have ever been allowed to run into each other. The philosopher's stone is no more to be found in the organic than in the inorganic world ; and we shall seek as vainly to transform the lower animal types into the higher ones by any of our theories as did the alchemists of old to change the baser metals into gold. The resemblance in embryonic forms to the first types in geo-

most evidently manifested by what is termed irritability or contractility, a property apparently specially referable to the muscular tissue, and yet found to exist in animals (as the Protozoa) which present not a trace of muscle, and also in the embryo previous to the development of true muscle. So far as it is connected with muscle, many distinguished physiologists are now of opinion, and have employed much ingenious reasoning and many skilfully-devised experiments to prove, that irritability—the susceptibility to a stimulus evinced by muscular fibre—is entirely dependent upon the influence of the nervous system, an influence not pumped through the connecting nerves by the active agency of the brain and spinal cord, as was sometimes fancied by Cullen and the older physiologists,\* but so thoroughly identical with the *vis nervosa* that, when the phenomena of muscular irritability are observed in embryonic tissue previous to the development of any visible nervous tissue (as in the heart of the embryo chicken; Funket†), this is referred to the stimulant action of an invisible nervous tissue or force.‡ And seeing that

logy and the lowest representatives now, speaks only of an ideal relation existing, not in the things themselves, but in the mind that made them" (Agassiz, *Methods of Study in Natural History*, Boston 1860, p. 318).

\* *Cyclopædia of Anatomy and Physiology*, article "Irritability," vol. iii. p. 42; and "Contractility," vol. i. p. 72.

† Lebert has also seen the heart of the embryo chicken beating when merely composed of cells, before the nervous system has become visible (*vide* Brown-Sequard's *Experimental Researches*, New York 1853, p. 118).

‡ An excellent summary of these views, and the grounds on



the contractility of the Protozoa acts in a similar manner, and is employed for similar ends and purposes, it must be regarded as similar in character to the contractility of the muscular system of the higher classes, and as depending upon some similar force. But the stimulant force—the *vis nervosa* of an *invisible* nervous tissue, be it embryonic, as in the higher animals, or adult, as in the lower ones—is and can be nothing else than a mode of manifestation of the great *vis insita*—Life the Psyche. And this generalisation leads one step further yet, and that a most important one; for a *vis nervosa* which exists and acts throughout life in animals of a low class, and for a portion at least of life in those of a higher class, wholly independent of a *nervous tissue*, cannot be regarded as having any closer dependence upon that tissue, or any connection with it, further than the employment of it as a vehicle of transmission, and of its centres as means of communication between the parts of the body (co-ordination), or between the individual and the world external to him. The nervous system is not therefore to be regarded as developed for the purpose of supplying some imponderable *vis*, secreted by its central organs, to the various parts of the organism whereby these are kept in tone and the discharge of their functions promoted; but simply as a separate organic development for the purpose of co-ordinating all the functions of organic life, and for permitting the development of consciousness in which they are based, is given by Dr. H. N. MacLaurin, R.N., in the *Edin. Med. Journal*, July 1863, p. 22.

relation to the external world, free from the danger and embarrassment that would be caused by this consciousness being extended to all the functions of our body. The blood, we know, exists diffused throughout the tissues of the Protozoa ; but as animals rise in the scale of being a circulatory apparatus—bloodvessels and a heart or hearts—are gradually superadded for the purpose of enabling every part of the body to be supplied with the amount and kind of blood necessary for its nourishment and the performance of its function. So also the *vis insita seu nervosa* exists throughout all the organic world universally diffused ; but as animals rise in the scale of being we find this gradually differentiated by means of the nervous system into many centres, in accordance with the requirements of their complex organisms, and all these centres in each individual united by the same means to one organic unity. And if we recognise this force—Life the Psyche—to be, as we have seen there is good reason for supposing (*vide antea*, p. 89), always possessed of consciousness and will, then we require, even for the development of our mental faculties—and, let me add, for the satisfaction of our highest hopes—no “agent external to the body, and as independent of it as light and sound,”\* which agent is the mind or soul ; for as the permanent source of life and thought, Life the Psyche, the guest and guide of the body—that material form which is only the outward and visible but ever-changing *imago* of the individual—must continue

\* Draper, *op. cit.* p. 285.

to live, and think, and feel, though from the absence of a material form it may be incapable of making these thoughts and feelings known to senses formed only for the purpose of receiving impressions from material objects ;\* and the life that now is cannot end here, but is and must be continued hereafter in a purer and happier form, freed from the trammels of organisation—this body of death.

\* “The following sentence is translated from D’Alembert by Dugald Stewart:—‘The truth is, that no relation whatever can be discovered between a sensation in the mind and the object by which it is occasioned, or at least to which we refer it ; *it does not appear possible to trace, by dint of reasoning, any practicable passage from the one to the other.*’ If this be so—if there be no necessary connection between the reception of an object into the senses and its impression on the mind—what ground have we for supposing the organs of sense to be more than machinery for the uses of the body ? The body may indeed be said to see through the eye ; but how—if we can trace no nearer connection between the mind and an object painted on the retina than between the mind and the object itself—how can it be asserted that the mind needs the eye to see with ?

“Most idle, then, are all disquisitions on the intermediate state founded on the assumption that the soul, when apart from the body, has no perceptions. Waller’s couplet—

‘The soul’s dark cottage, battered and decayed,  
Lies in new lights through chinks that time hath made’—

may be, perhaps, is, no less true in fact than pretty in fancy. Spirits may acquire new modes of communication on losing their mouths and ears, just as a bird gets its feathers on bursting from the shell. . . . Our still embryo soul may perhaps have latent senses—living inlets, shall I call them—or capacities of spiritual vision and communion ? to be exercised hereafter for its improvement and delight, when it issues from its present womb, the body” (*Guesses at Truth*, First Series, London 1847, p. 11).

The diffuse *vis insita* of the lower organisms first becomes differentiated into a co-ordinating *vis nervosa* in the ganglionic or sympathetic system of nerves which presides over all those functions more or less completely removed from the sphere of the ~~will~~ or consciousness, all therefore included under what are termed the vegetative processes, and which make up the sum of the functions concerned in the nutrition and maintenance of the body. This system, which is that most imperatively requisite for the preservation of each individual, becomes developed so soon as the simple cellular structure of the primary organisms becomes differentiated into a more or less complex series of organs or systems of cells, each of which has only a certain fixed duty to perform in relation to the life—organic unity—of the individual; and the co-operation of these organs for their mutual preservation is thereby insured—all being thus united, not only by the circulation through them of a common nutrient fluid, but also by the agency of this system of nerves, so bound together with such sympathetic ties that no organ can suffer injury without the others suffering with it, and such a series of actions being initiated as leads to the recognition of the injury by the whole of the organic frame, and the co-operation of all its powers to the repair of this injury. In these duties it is in the higher animals intimately associated, as it is also closely connected anatomically, with the cerebro-spinal system of nerves; it is therefore extremely probable, although it is difficult or impossible to prove it either physio-

logically or anatomically, that even in the lower organisms a portion of the ganglia and their nerves perform functions analogous at least, if not identical, with those of the cerebro-spinal system, while others are identified with what we term the true ganglionic system.

When in the ascending scale of being we reach the vertebrate sub-kingdom, we find that a portion of what has hitherto been more or less scattered throughout the body in the form of isolated ganglia connected by nervous cords, is now collected together into central masses and contained for protection within bony cavities. As the ganglionic system contains within it the centres of vegetative life, so these central masses of the cerebro-spinal system contain within them various centres of higher animal life, all duly elaborated in accordance with the increasing requirements of organic life, and also with the gradual growth of mind first distinctly apparent in these higher animals, and which, even in its faintest manifestations, differs only in degree from that of man, in whom it attains its highest development. The necessity for these separate centres depends not upon any differences in the forces employed, but upon the peculiar nature of our present existence and the absolute necessity there is of placing all those internal functions connected with the growth, preservation, and decay of the individual beyond the conscious control of the mental faculties, as otherwise death would continually stare us in the face, and the most devoted attention would hardly suffice to save us from it ; “ a doubt, a moment’s pause of irresolution, a forget-

fulness of a single action at its appointed time, would otherwise have terminated our existence.”\* From all this anxiety and danger we have been freed by the institution of a nervous system which saves us from the continued consciousness of the performance of every function of the body, by having separate centres specially developed for the cognisance and co-ordination of these functions, and which cut off all unnecessary intelligence from that centre—the cerebral lobes—which is specially developed as the sole organ of consciousness in relation to the external world.

If we remove the cerebral lobes, or if we stupify them with chloroform, the animal—nay, man himself—is thrown into a deep stupor resembling sleep, in which memory is lost. This condition of course is permanent in the one case and temporary in the other, but the animal still cries and moves convulsively under the knife; if we remove the encephalon lower down and take away the *medulla oblongata*, leaving only the spinal cord, convulsive movements still continue, but the cries have ceased; the animal, however, still seems to feel the pain though it does not express it, and decapitated guinea-pigs and kittens carry first one hind-leg and then the other to the spot as if to scratch it.† This is about all that has been actually ascertained by the innumerable carefully-instituted experiments which

\* Sir Charles Bell's *Bridgewater Essay*, 1834, p. 12.

† Legallois, *Experiences sur la Principe de la Vie*, 8vo, Paris 1812; *vide* also Schroeder van der Kolk *On the Spinal Cord*, New Syd. Soc. Edin.; and Brown-Sequard's *Experimental Researches*.



have been performed by very many skilful observers during a long course of years. Many of them—Senac, Caldani, Kay, Legallois, Paton, Arnold, Pflüger, etc.—have been thus led to the conclusion that the spinal cord does possess a power of perception and voluntary action; while others, dreading the apparently materialistic tendency of any such idea, and occupied with the preconceived idea that “our spirit and our will” is some ethereal agent connected solely with the cerebrum, through which, and the nerves connected with it, it receives its information and issues its mandates, have been driven to all sorts of illogical reasoning to avoid this conclusion.\* To myself the matter appears in a totally different light. Sensation, consciousness, and will are not properties of ordinary matter, only of organised matter, and matter only becomes organised when placed in certain peculiar circumstances by the Spiritus Rector—Life the Psyche. But Life the Psyche exists and manifests itself by living action, sensation, and will, long before we can perceive any trace of a nervous system. We are justified therefore in regarding sensation, consciousness, and will as wholly independent of the nervous system—nay, of matter itself—and as part and parcel of Life the Psyche, that imperishable force, that internal and immortal Ego, which

\* It would be foreign to my object, and would take up too much space, to enter at large upon the reasonings connected with this subject. This, as well as the detailed experiments, will be found in the authors referred to, and an excellent summary will also be found in Lewes' *Physiology of Common Life*, London and Edinburgh 1860.



exist in union with the whole organism—*tota in toto*, as the ancient metaphysicians have it—acting upon and through its organisation, in accordance with the requirements of the body as an organic unity, whereof the function of each part is subordinate to the wellbeing of the whole, and evincing its presence in each tissue by the peculiar properties of that tissue—as irritability in connection with the muscles, as a secreting power in the glands, as a co-ordinating power in the nerves generally, as mind in the cerebral lobes, as life everywhere. Thus it is our brain that is the centre for conscious reasoning, our *medulla oblongata* that is the centre for conscious sensation, and our spinal cord that is the centre for combined movements, precisely as it is our liver that secretes bile, and our stomach that digests food ; but it is Life the Psyche that rules over all and in all, for “man is not the result of organisation but a creature served by organisms” (Sir Wm. Hamilton). Consciousness and will must thus be regarded as attendant upon the exertion of all our functions, but we are not aware of it—such knowledge, as already mentioned (p. 102), being wisely hidden from us as dangerous to the continuance of our existence ; and it only comes to light when the natural functions of the part, as in the case of the spinal cord, evince its existence. The whole body, therefore—that is, the peripheral termination of all the nerves—constitutes in its entirety the *sensorium commune*, a common centre, not restricted to any point or organ, but co-extensive with the organic frame, from which the nerves are differentiated into various minor

centres of motion, sensation, thought, etc., in accordance with the requirements of the animal as it rises in the scale of being, and so connected and combined as to co-ordinate all the separate organs and nervous centres of which this frame consists into one organic unity, whereof if one member suffer all the others suffer with it, so that it not only maintains that general equilibrium of all the functions which we term health, but also acts in restoring equilibrium when from any cause it has been disturbed; and the series of changes thus originated we term disease—the active force being not here a vital principle and there a nervous one, here mind and there matter, but an all-pervading conscious intelligence—Life the Psyche.

If, however, we regard Life the Psyche as a never-dying organic force acting at all times consciously and voluntarily, though we are only able to discover this when these actions are such as can be brought under the cognisance of our mental organ—as the source, therefore, of that susceptibility by means of which organised matter is enabled to react upon those stimuli which call its powers into action—how are we to explain the wild plunging of the limbs of yon headless creature when irritated by the galvanic current? Does life yet linger in the bloodless corpse? and are we thus to believe, with the ancient Egyptians, that the soul still rests in the body while putrefaction has not yet commenced? These subsidiary questions can only be answered in replying to the more general one—What is death?

The Emperor Marcus Aurelius has classed together Birth and Death as similar mysteries of nature\*—the one being as it were but the aggregation of those same molecular particles which the other resolves and restores to its primitive molecular state. For us the matter has become all the more mysterious that we have learned that there is no stability between these termini, but that constant mutation constitutes the fundamental state of our corporeal existence—of man's life so far as that is or can be materially evinced. For those bodies which we so fondly identify with our individual selves are continually changing from day to day, every act evincing life is a source of death to the molecules of which our frames are composed: we are continually—every moment—dying, and we are repeatedly devoured by worms and animaleulæ, or metamorphosed into vegetable matter, long before that complete separation of our spirits from the matter they have so long animated and held together which we term death; for this separation occurs only when the *unity of the organism* is destroyed and the phenomena dependent upon the preservation of that unity are interrupted. The organism consists of a series of organs, part of which minister to the general nutrition of the frame, while part are developed for the purpose of maintaining the general relations of the individual with external nature; and a part of both series—such as the central organs of the circulatory and nervous systems—are more immediately concerned in

\* 'Ὁ θάνατος τοιοῦτος ὅλον γενεαίς, φύσεως μυστηρίον, etc. (*Meditations*, Oxon 1704, lib. iv. p. 49).

maintaining the general organic unity, and any injury or interruption of their functions is followed by the more or less speedy death of the individual. In cases of death from accident or disease this interruption of the functions of these central organs is produced more or less suddenly and directly—death as it were extending from the centre at once towards the circumference; while in death from old age the functions of all the organs fail gradually, and death—sapping first the out-works—extends from the circumference towards the centre.† In whatever way, however, death happens, many of the functions which are apparently dependent upon life, and which are certainly originated by it, survive its apparent cessation.

Instead of cooling after death the body occasionally develops heat in increased quantity, as is specially noticeable after death from cholera. Movements of an apparently reflex character sometimes take place in such muscular organs as the bladder, rectum, and uterus, which have been known to expel their contents after death. Post-mortem movements of the voluntary muscles occur after death from cholera, and it has even been argued, from the post-mortem disappearance of fluid exudations and from the supposed growth of the hair and nails, that secretion, absorption, and nutrition, continue to be performed after the death of the body. It is probable that most of these phenomena are explainable upon ordinary chemical and such physical prin-

\* Bichat, *Rech. Physiol. sur la Vie et la Mort*, 8vo, Paris 1805, p. 151.

ciples as transudation, endosmosis, etc. ; but others of them, such as those dependent upon muscular action, clearly arise from the retention by the tissues after death of those properties by which they were distinguished during life. Hence death has been regarded as possessing a twofold character—as *somatic* when the organic unity is destroyed, and as *molecular* when the irritability of all the tissues has ceased and the body has commenced to succumb to external influences. It is only from analogy and experience that we recognise the former ; the latter is evident to all our senses. For we know that even during the persistence of somatic life molecular death is continually taking place : every exercise of intelligence, every act of life,\* is continually determining some change in the affinities of our textures—the molecular death of some part of our organism—and it is by the removal and continual replacement of these dead molecules by others endowed with vital susceptibilities that somatic life is maintained. And we also know that somatic life may still exist though every manifestation of its functions be in abeyance, and only the vital susceptibilities—*l'aptitude a vivre*—remain, as in leeches, perch, and many other animals, which may remain for some time in a frozen state and still return to life when thawed. The Rotifera may remain dried for years and revive to life—to living actions—when the necessary moisture is supplied ; and man himself has been known to remain in a state of

\* Jede Function ist an mechanische Veränderungen der Substanz geknüpft" (Virchow, *Vier Reden*, p. 96).

suspended animation from hanging, drowning, catalepsy, etc., for periods varying from several minutes to several days. Somatic death is not therefore merely the cessation of the manifestation of living actions, because that may be only suspended animation ; it does not consist in the succumbing of the organism to external influences, because this does not occur till after the complete cessation of all vital susceptibilities, which does not take place till some time after the setting in of what we term somatic death ; therefore this can only be—as it were—a hypothetical death, a condition of the body which, from the preceding phenomena and the cessation of every apparent vital function, coupled with our past experience of the like, we hold to be the precursor of true or universal molecular death—a state which is at once recognised by all our senses, and which can never be confounded with the mere suspension of animation. The mere persistence of certain of the phenomena of life therefore only proves that the organic substance presenting them has once been under the life-giving influence of Life the Psyche ; whether it is so still or not we are left to conclude by the deductions of our reason from the results of our experience. For the destruction of the organic unity, and the cessation of the influence of Life the Psyche which depends upon it, at once deprives the body universally of *l'aptitude à vivre*—the power of replacing the molecules destroyed in every act evincing life with others endowed with similar susceptibilities ; though it does not immediately deprive all the molecules of the body of the properties

they have acquired under its influence, but leaves these to die\* out beneath the gradual reassertion of the supremacy of physical laws, just as a stone impelled by the hand continues to wing its flight through the air long after the impulse has ceased and the hand is motionless, till at length the influence of physical agencies overcomes its acquired property and brings it to rest upon the earth.

Life, or living action, therefore, is the property of organised matter—is the result of specific stimuli acting upon specific susceptibilities. These stimuli are to be found in the air we breathe, the food we swallow, and all the external and internal relations of our life ; these susceptibilities are derived from Life the Psyche alone, which is never found apart from organisation, and passes in some unknown manner from organism to organism, whether the multiplication be by ordinary generation, by gemmation, fissure, or any other mode of reproduction. Thought is the highest product of these susceptibilities, simple irritability the lowest : neither of them is life ; both alike are only observed as the result of some stimulus acting upon matter organised by a vital agent. If the one be apparently more persistent than the other, it is probably only because the phenomena to which it gives rise are more objective, and therefore more readily cognisable by our senses, but

\* All the more rapidly the more nearly they have been exhausted previous to somatic death (*vide* Brown-Sequard "On the Laws of Muscular Irritability, Cadaveric Rigidity, and Putrefaction" (*Compt. Rend.* vol. xlv. October 1857).



partly also, and probably chiefly, because the molecular susceptibilities upon which the other depends are more readily exhausted, and are therefore more dependent for continuance upon the continued influence of Life the Psyche. All the phenomena of vitality, therefore—living action, sensation, and thought, so far as these come under our cognisance, whether objectively or subjectively—must be regarded as only peculiar *modes of being of matter*, the result of the action of specific stimuli upon specific susceptibilities, but deriving these susceptibilities directly from the influence of a  $\Delta\psi\acute{\alpha}\mu\iota\varsigma$  or  $\Psi\psi\chi\eta$ , the nature of which we do not further know, but which is never found but in connection with organised forms derived from pre-existing organised forms; and, inasmuch as it is the only permanent part of our frame, it alone is entitled to be considered the individual—the material form being only the outward and visible *imago*; while, as from its very character as a force it cannot cease to exist, so it is probably identical with that immortal and spiritual part which revelation teaches us resides in our bodies, and which we term the soul.

The permanent source of life and thought and feeling, this Psyche must continue to live, and think, and feel, though, from the absence of a material medium, incapable of making these thoughts and feelings known to senses formed only for the purpose of receiving impressions from material objects.

During all these years that have elapsed since Marcus Aurelius wrote we have not attained any more

precise knowledge as to the origin or the cessation of life. Birth and death are mysteries still, all the more mysterious for having been so long puzzled over. But though we have gained no positive insight into the actual nature of the power or force that thus employs all the agencies of external nature in building up the framework of each individual organism—whether that be a simple Protozoeeus, or a complex animal, such as man himself—it is fortunately sufficient for us as therapeutists to know that the actions and reactions induced by the agencies of external nature are those employed in maintaining living action, and that, so far as we know, chiefly by means of the one great co-ordinating system of the animal frame, the nervous system; because, by modifying these agencies, we are enabled to modify the manifestations of vitality, and as disease is “the product of the vital actions always taking place within the body,”\* we are thereby assured that we can modify disease, and we have the clue given us both as to the means to be employed and the mode in which these means may be supposed to act. Moreover, as men and as sharers of all the human hopes, it is something to have a scientific reason for believing that

“There is no death—what seems so is transition.  
This life of mortal breath  
Is but the suburb of that life Elysian,  
Whose portal we call death.”

While for all it is most important to remember that this transition, so apt to be involved in the mists of

\* Forbes, *loc. cit.*

vagueness, so pathetically expressed in the dying wail of Hadrian—

“Quæ nunc abibis in loca,  
Rigidula, nudula, pallida”—

is not, and cannot be

“So much even as the lifting of a latch;  
Only a step into the open air,  
Out of a tent already luminous  
With light that shines through its transparent walls;”

while it is ours now to ensure what the nature of that light shall be.\*

\* Some very remarkable instances of the shining of this light, and of its varying nature, according to the nature of the previous lives of parties concerned, are to be found in an American work on infidelity, by Dr. Nelson of New York. The author—a physician who was once an infidel—owed his emancipation from unbelief chiefly to his inquiries in regard to this topic, and to the observations made by himself in regard to it at the bedsides of the dying. This work is little known in this country, but the chapter upon this subject is given entire in Blatch’s *Lessons for the Living from the Experience of the Dying*, 2d ed., Johnstone, Edinburgh 1848.

## CHAPTER FOURTH.

## OF HEALTH AND DISEASE.

*“Qui ergo actionum vitalium, naturalium, atque animalium exercendorum requisita ignorat, adeoque Vita causas nescit, et sanitatis, ille defectum illarum, id est morbos, cognoscere non potit.*  
—H. BOERHAAVE, *Aphorismi*.\*

*“Nec credibile est cum scire curare morbos qui unde sint nescit.”*—CELSUS.

DR. JOHN BROWN has stated, in his *Elements of Medicine*, that “good health consists in a pleasant, easy, and exact use of all the functions.” And that “ill health consists in an uneasy, difficult, or disturbed exercise of all or any of the functions. Diseases come under this head.”† In a few words Brown has thus given us a definition of health at once simple, easily understood, of universal applicability, and to which no exception can be taken.

So long as a man's functions continue to be performed in a pleasant and easy manner, without attracting his attention, he will not trouble himself to ascertain whether in all points he comes up to any hypothetical standard—such, for instance, as that admirable one laid

\* Lugd. Bat. 1727, p. 1.

† *Elements of Medicine*, London 1795, p. 1.

down by Dr. Gregory.\* He will not care to investigate whether his tongue be *nitida, non vero nimis rubra*, nor will he worry himself even though he should deviate somewhat from Gregory's standard in this or any other particular. And in this he is right, for health is no more a state of perfect equilibrium than is life itself one of constant immobility; all its conditions are variable and mutable, and what we call health is only a hypothetical state of body evinced not so much by any positive properties as by a negative one. We believe ourselves to be in health because we do not feel ill—there is nothing uneasy or perturbed in the exercise of our bodily functions; we can live without rule, and we do not need the doctor; or, as Celsus put it long ago, in terms equally general, terse, and expressive as those of Brown: *Sanus homo, qui et bene valet, et suæ spontis est, nullis obligare se legibus debet; ac neque medico, neque Iatrolipta egere.*† Further, as all our bodily functions are the product of the living actions continually going on in our frames, and these in their turn are the result of the action of specific stimuli upon specific susceptibilities, we may define health to be the result of the normal action of those stimuli necessary for the production of living action; while, in like manner, disease may be regarded as the equally normal result of the abnormal action of the same or similar stimuli.

Viewed in this light, disease loses the inexplicable character ordinarily supposed to characterise it; the

\* Gregory's *Conspectus Medicinæ*, Edin. 1851, p. 4.

† *De Medicina*, Venet. 1497, cap. i p. 5.

mantle of mystery in which it has hitherto glided about drops from its shoulders, and it appears in all its naked verity, simply as the necessary complement of life as evinced in living action, just as death in like manner is its inevitable result.

For as every act by which the imperishable  $\Psi\psi\chi$ , life, manifests its existence in the organic frame entails the molecular death of a part of that frame, and as the replacement of these molecules entails in turn such an amount of mechanical friction and loss of power as must sooner or later—wholly independent of any other causes—ensure from purely physical laws the total cessation of all these living actions, so it is that death—somatic death—is the inevitable result of somatic life.\* Passing away is the motto of our present state, written in blood on every organ of our body, just as for similar reasons it may be traced imprinted on every thing around us, or read in characters of fire emblazoned on the deep blue vault of heaven above.†

\* “Life is a disease of which we die,” writes Pierre Bernard; and Brown, in his CCCXXVII. Aphorism, after comparing the forces of the planets with those constituting the lives of their inhabitants, goes on to say—“Whatever is the cause of their functions, whatever gives commencement and perfection to these, the same weakens and at last extinguishes them. It is not, therefore, true that some powers are contrived by nature for the preservation of life and health, others to bring on diseases and death. The tendency of them all is indeed to support life, but in a forced way; and then to bring on death, but by a spontaneous operation” (*op. cit.* vol. ii. pp. 44, 45).

† *Vide* a paper by Professor W. Thomson “On the Mechanical Energies of the Solar System,” in the twenty-first volume of the *Transactions of the Royal Society of Edinburgh*. In refer-

Thus, too, as life as evinced by living action is the product of specific stimuli acting upon specific susceptibilities, and as we find that the immediate result of any excess or defect of these stimuli, beyond certain unavoidable and necessary limits of variation within which health may be maintained, is the development of certain morbid phenomena—as those of asphyxia, starvation, insolation, etc.—which, though not usually so designated, are nevertheless strictly speaking diseases, inasmuch as they are evinced by “the uneasy, difficult, and disturbed discharge of the natural functions ;” \* so

ence to it the late Dr. George Wilson has most eloquently said : “The blunder that men made in former days in seeking after an impossible perpetual motion has led them quite recently to the discovery of a universal law of nature which radiates light into the distant nights of the beginning and of the end of the history of the universe, which proves that the universe has had a beginning and that it shall have an end, when all the scattered stars shall fall like the ruined type-setting of a printer into one mass. Already the most distant stars, like the outermost sentinels of a flock of birds, have heard the signal of sunset and return, and have begun to gather closer and to turn their faces homewards. Millions of years must elapse before that home is reached and the end comes ; but that end is sure. God alone is eternal, and they who through his gift are partakers of his immortality. It is wonderful to find a patient mechanical philosopher, looking only to what his mathematics could deduce from the phenomena of physical science, using words which, without exaggeration, are exactly equivalent to these—‘Thou, O Lord, in the beginning hast laid the foundation of the earth, and the heavens are the work of thy hands ; they shall perish, but thou remainest ; and they all shall wax old as doth a garment, and as a vesture shalt thou fold them up ; and they shall be changed, but thou art the same, and thy years shall not fail.’”

\* Or, as Alison has put it, “We call all states of the living



we are led irresistibly to see that the capacity inherent in the organism and throughout all its parts of being influenced for good by a certain amount of certain stimuli, is coincident with the capacity of being influenced for evil by a different amount of the same, or by actually different though similar stimuli; that disease therefore is the necessary complement of life; or rather, seeing we are not all of necessity diseased, that under our present laws of existence a capacity for living necessarily implies a capacity for becoming diseased.

I have already mentioned the well-known fact that the natural stimuli of living action are capable of maintaining health even while acting within certain unavoidable and necessary limits of variation. It is evident that this equilibrium of result in the living body, notwithstanding a varying amount of cause, can only be produced by means of some compensating agency of a vital character, precisely as a similar equilibrium in physical matters can only be maintained by means of some compensating physical agency as exemplified in the pendulum of a chronometer. To this physiological axiom there may be added a pathological corollary to this effect—that inasmuch as those minor variations in the action of the vital stimuli are compensated and health maintained by some vital agency, so there is also every reason to believe that in all those cases where the variations in the action of the

body diseased in which there are such deviations from its natural condition as cause suffering or inconvenience, or endanger life" (*Outlines of Pathology*, Edin. 1844, p. 1).

same or similar vital stimuli are greater or more violent the compensating agency is in both instances the same, and that what we call disease is but the visible expression of a more prolonged and intensive series of those compensating organic changes which are daily and hourly taking place within our frames.

This view of the nature of disease is one that is fraught with most important therapeutic considerations. It is evident that, according to it, what we are in the habit of calling disease is actually identical with the *vis medicatrix nature*—that is, with those vital powers which are generally regarded as antagonistic to disease, and which are popularly looked upon as protesting against it. From this point of view Dr. Bennett may be regarded as laying down apparently sound principles when he states that disease cannot be cut short, and that the only end of judicious medical practice is to conduct it to a favourable termination ;\* but it is obvious that this doctrine is only apparently sound, and is really self-contradictory, because, if by our appliances we are able so to modify the vital powers as to conduce to a favourable termination of their efforts, that very fact involves the possibility of so modifying them as to shorten their labours, and thus, as we say, to cut short the disease. Either we can influence these vital powers or we can not—either our treatment may be useful or must be useless ; if we can influence these vital powers it must be for good or for

\* *Edin. Med. Journal*, March 1857, p. 783, and May 1857, p. 998.

evil, and indeed the one involves the other ; therefore it behoves us to be careful in taking action. And the only way we can influence these powers is by acting upon and through that compensating vital agency which has been the proximate cause of the development of the morbid phenomena. It is of importance, therefore, to endeavour to discover what this vital agency is ; for it is only by knowing this, and knowing how we can influence it, that we can understand the extent of our ability to do so, or indeed see our way clearly to any rational system of therapeutics whatever.

To John Brown—"scorned and reviled as is for the most part his memory"—belongs unquestionably the honour of having first pointed out that life, as evinced in living action, was not a mere "vital spark of heavenly flame," but was the product of specific stimuli acting upon specific susceptibilities. "In all states of life," he says, "man and other animals differ from themselves in their dead state, or from any other inanimate matters, in this property alone ; *they can be affected by external agents, as well as by certain functions peculiar to themselves, in such a manner that the phenomena peculiar to the living state can be produced.* This proposition extends to everything that is vital in nature, and therefore applies to vegetables." \* Brown's merit, however, consists entirely in his having insisted upon the necessity of the constant co-operation of stimuli for the production of vital phenomena ; for on the one hand, though he denied

\* *Op. cit.* p. 3.

the existence of life as an entity, he was nevertheless a confirmed substantialist, speaking everywhere of Excitability or Vitality in that character ; while, on the other hand, he was totally unaware of the importance and true character of those powers the existence of which he was the first to point out. Thus we find him stating in regard to the cure of diseases that we must always use, according to the indications, the appropriate stimulants or debilitants, and “never wait or trust to the supposed powers of nature, which have no real existence.”\* And again, in regard to certain local diseases, he says that it sometimes appears as if the energies of nature tended to restore the healthy state ; but this is not the case, for if the appropriate remedies be neglected the solution becomes worse, while, as if he had some dim inkling of the reality, he adds—“It is the excitability, or that property of life by which the functions are produced, that, wherever life, whether in a part or over the whole body, is injured, procures the return of the healthy state by means of the external powers acting upon it. It is thus the excitability, affected by the action of those powers—that is to say, the excitement—that governs the state of the solids, both in parts and over the whole body.”† The susceptibility of the organs to stimuli was, according to Brown, derived from a supposititious substance termed *excitability*, a certain limited amount of which was born with each individual, and sufficed to maintain life till it was exhausted or proved

\* *Op. cit.* vol. i. p. 81.

† *Op. cit.* vol. ii. p. 335.

fatal, by over-accumulation.\* In the previous chapter I have given some reasons for supposing that this susceptibility is derived solely from the connection of life—the psyche—with the body, that it persists while this connection is maintained; and after this, in certain parts and in a certain limited degree, only for so long as what we may term the *vis inertia* of the organism may be supposed to endure. Further, that it is probably identical with the *vis nervosa*; and that, by means of the co-ordinating powers of the nervous system, it not only maintains health, but restores it when from any cause it has been lost, and is thus also identical with that compensating vital agency to which I have just referred as of so much importance in a therapeutic point of view. It is not, however, by knowing what it is, but by knowing how it acts, that we are enabled to discover how to influence this compensating agency. This, therefore, is the point of most importance for us as therapists.

I have already stated that living action is excited and maintained by the influence of all the external and internal stimuli incident to our present state. The external stimuli were, according to Brown, “heat, diet, and other substances taken into the stomach, the blood, the fluids secreted from the blood and the

\* Darwin (*Zoonomia*) also propounded a somewhat similar doctrine, only he supposed that what he called his *Spirit of Animation*, or sensorial power, might be generated by the central organs of the nervous system from time to time as required.

air.”\* Poisons and contagions were also reckoned under the same head. Those functions which he reckoned as active agents were “muscular contraction, sense or perception, and the energy of the brain in thinking.”† In making this category, Brown seems to have confounded the primary agents or causes with their phenomena or results, though unquestionably many of the latter do act as secondary causes, as must inevitably be the case in so complex an organism as the human frame. Thus he has elevated the blood to the rank of a primary agent, although its formation is evidently a mere phenomenon of vitality, the result of several primary causes; and the same may be said in regard to secretion, muscular contraction, sensation, and thought; all no doubt acting in an important manner as secondary agents in the production of various vital phenomena, but all as unquestionably themselves phenomena of vitality, and the results of the action of other primary agents. We must therefore modify Brown’s category so far as only to include among the primary agents those external agents which are capable of producing vital phenomena when brought into contact with matter possessed of the requisite susceptibility, many of the resulting vital phenomena being employed as secondary or subsidiary agents in the modifications of each other. The most important of these primary agents are temperature, air, and aliment, including both food and drink.

A certain amount of *heat* is essential for the manifestation of the chemical and physical phenomena of

\* *Op. cit.* vol. i. p. 3.

† *Op. cit.* vol. i. p. 4.



the organic,\* as well as of the inorganic world, and if the range of temperature necessary for the production of these phenomena is apparently less restricted in the

\* Thus Reaumur found that pupæ which would not naturally have become developed till May might be caused to undergo their metamorphosis in a fortnight, during the depth of winter, by the influence of artificial heat ; and on the other hand, that their change might be delayed a whole year beyond its usual time by the prolonged influence of a cold atmosphere. The recent researches of Mr. Higginbottom have shown in a most striking manner the remarkable influence of a low temperature in retarding, and of a high one in accelerating the metamorphosis of the tadpole into the frog, as well as the entire dependence of the change upon temperature, and not upon light, which was so long supposed to be the influential agent (vide *Philos. Trans.* 1850, p. 431, and *Proc. of the Roy. Soc.* 1862, vol. xi. p. 532). To the influence of external temperature is also unquestionably in a great measure due the dwarfish development of the human inhabitants of arctic climates, the Lapps and the Esquimaux, and the retardation in them of that function—menstruation—which is so dependent on development, as well as the acceleration of its appearance in the inhabitants of warmer climates, or in those who from an early age are exposed to a high artificial temperature (as the Manchester cotton-spinners). In regard to the influence of temperature on the function just referred to, I may mention that Dr. Mayer, in his work *Du Rapports Conjugaux*, 4me. ed. Paris 1860, p. 280, after quoting from Raeborskis' work *De la Puberté*, etc., Paris 1844, p. 6, a table giving the age at which menstruation first appears in various places of which the latitude and mean annual temperature is given, adds : “ De ce tableau il est permis de tirer ces deux conclusions ; 1mo, que l'époque de la puberté est d'autant plus précoce que la latitude est moins élevée ; 2do, que des deux influences, latitude et température, c'est cette dernière qui domine comme on peut le voir pour Göttingue et Varsovie, situées sous la même latitude, mais ne jouissant pas d'une température identique.” (Vide also Beck's *Med. Jurisprudence*, London 1825, p. 83, note.)



former than in the latter, this is solely due to the existence of that compensating vital agency I have already referred to. So long as life is in abeyance, as in animals in a state of hibernation, and in the ova of birds and insects, and consists solely in the possession of *l'aptitude à vivre*, this compensating agency is either not called into exercise at all, or only to such a very limited extent as to render it a matter of comparatively but little importance in regard to the present inquiry, but the moment life becomes evinced by more evident living actions, then we have set in motion a series of compensating reactions whereby an average mean internal temperature is maintained in spite of very considerable variations in that external to the body.

Man can range unseathed through climes of every temperature from  $-55^{\circ}$  to  $130^{\circ}$  F., maintaining all the while an average mean internal temperature of about  $98^{\circ}$ . Much of this ubiquitousness he owes unquestionably to his omnivorousness, coupled with that instinctive capacity of battling with the elements with which he is born. An animal which can subsist on *tripe de roche* and shoe leather, and luxuriate on frozen blubber in the arctic regions, and yet procure sufficient nourishment from rice or fruits within the tropics, is not easily starved anywhere ; while the capacity of going about more or less *in puris naturalibus*, or clothing himself more or less warmly, and thereby promoting or preventing both radiation and evaporation, as his sensations lead him, affords a powerful adjunct to the means sup-

plied by nature, in the greater or less amount of oxygen in the volume of air inspired, for aiding and maintaining his mean temperature. For very short periods a much higher temperature—up even to  $320^{\circ}$  F.—may be borne, as has been proved by the experiments of Sir Charles Blagden, Dr. Fordyce, and Mr. Chantry ; it is questionable, however, whether a much lower degree of cold than  $-55^{\circ}$  could be borne with impunity, and it would certainly be very difficult to put it to the proof. The chief effect of a high temperature is to stimulate the organic functions of the body, while cold, when continuously applied, depresses all the organic functions. Cold, however, is merely a relative term, signifying a diminution of temperature ; it may be felt, therefore, at either end of the thermometric scale, and precisely the same degree of heat feels either cold or warm according as we have been exposed to a higher or lower temperature just previously. Thus Captain Parry describes a rise in the thermometer from  $13^{\circ}$  to  $23^{\circ}$  as “much too high to be agreeable ;” while Dr. Walsh states that while sailing along the coast of Brazil—after having been long accustomed to a temperature of  $72^{\circ}$ —a strong breeze set in from the sea, and the thermometer fell to  $61^{\circ}$ . “The sense of cold,” he says, “from the sudden transition of temperature was quite painful. After bearing it for some time shivering on deck, it became intolerable, and we all went below, put on warm clothing and dreadnoughts ; and again appeared with thick woollen jackets and trousers as if we had been entering Baffin’s Bay, and

not a harbour under one of the tropics.”\* Animal heat is derived from the oxidation of a portion of the food which has never been converted into living tissue, in the course of its retrograde metamorphosis, and also from the oxidation of the organic tissues in the course of the performance of the vital and mechanical works of the frame ; the force unused in the production of mechanical power developing itself as heat.† During foetal life a large proportion of the necessary heat is supplied by continuous transmission from the mother’s tissues, and one reason of the difficulty in rearing infants born prematurely arises from the difficulty of maintaining them at a proper temperature ; a difficulty not to be overcome by clothing or diet, but which may be partly so by maintaining an elevated temperature in the atmosphere around them.‡ The residue of the foetal temperature is supplied by the ordinary vital transformation of the tissues. The oxygen needful for this end being furnished by means of the placental circulation by which the foetus may be said to respire *in utero*. Any interruption to this placental respiration, even by the bare compression of the uterine arteries by the con-

\* Watson’s *Lectures on the Principles and Practice of Physic*, 4th edition, London 1857, p. 86.

† In cold weather this is rapidly carried off by external agents ; it is therefore more slowly accumulated in the system, there to cause increased rapidity of tissue, transformation, and consequent exhaustion. Cold does not increase our muscular powers, but it increases our ability to exert them in accordance with the laws under which we live.

‡ Edwards, *De l’Influence des Agens Physique*, etc., Paris 1824, p. 505.

traction of the muscular coat, after laying open the uterus, is followed by instinctive respiratory movements, evinced by the opening and shutting of the mouths of the foetuses, accompanied or immediately followed by a sudden convulsive respiratory elevation of the ribs, repeated at irregular intervals, and gradually becoming less frequent and feebler. Subsequent to these instinctive respiratory movements there are found "the actual signs of death from asphyxia by drowning; the heart, particularly the auricles, stuffed with dark fluid blood; the branches of the pulmonary arteries and veins always contained blood, while the air-passages were filled with a watery fluid, probably *liquor amnii*."\* The obvious conclusion to be deduced from such experiments is, that the *besoin de respirer* arises from the wants of the system becoming known by means of the nervous system to the *medulla oblongata*, which seems to be proved to be the centre of the respiratory movements by the researches of Legallois, Flourens, and Sir Charles Bell, and that the instinctive respiratory movements thus originated produce and precede the subsequent well-known vascular changes. Subsequent to birth the application of various stimulants to the body generally, or to certain parts of it, excite these respiratory movements. Some of these—such as the application of stimulants to the nostrils, of sudden cold to the face or other part of the body—seem to excite respiration as the preliminary part of some consentaneous muscular

\* Schwartz, *Die Vorzeitigen Athembewegungen*, quoted in Casper's *Forensic Medicine*, New Syd. Soc. ed. vol. ii. p. 128.

act—such as sneezing, the raising a cry of alarm, etc. But the application of cold to the surface of the body is also an excitant of the respiratory movements *per se*, with the object of producing thereby an increased evolution of animal heat ;\* this it does in proportion to the sharpness of the sensation excited, and by means of a reflex and involuntary nervous action.† We take advantage of this to rouse the dormant vitality of new-born children, applying warmth intermediately, partly to

\* “When a young bird, bare, or but scantily covered with feathers, is taken from the nest and exposed to the open air, even in the summer season, its respiration will be seen to be accelerated in the ratio of the cold it experiences. It is peculiarly worthy of remark, that this salutary reaction, taking place under the influence of the nervous system, acting in the case quoted independently of the will, is in a great measure the same as that which we bring into play by means of the will to combat the same evil. When in health, for instance, we are exposed to, and feel the impression of cold severely, and have no resource but in ourselves, we begin immediately to take exercise, and move about. And if we do this with sufficient vigour, the motions of respiration and circulation are very soon increased in rate, and our heat returns” (article on “Animal Heat” in the *Cyclopædia of Anatomy and Physiology*, vol. ii. p. 675).

† I use the term reflex action as conveniently indicating that co-ordinating power of the nervous system which does not always or necessarily come under the cognisance of the mind, or the influence of ordinary volition. Not in the restricted Marshall-Hall sense of a mere mechanical excito-motor system ; but rather, as Proehaska understood it, as a law written by Nature on the medullary pulp of the sensorium, and employed in every action, having for its object the preservation of the individual (*vide* Unzer and Proehaska “On the Nervous System,” *Syd. Soc. Trans.* p. 430, etc.)

increase the sharpness of the sensation, but chiefly to prevent that exhaustion of vitality which would be certain to succeed to the primary, and at first chiefly local reaction where the powers of life are so feeble.\* Cold, therefore—that is a relative diminution of temperature—is a powerful stimulus to vitality, and properly employed may be made available in rendering the performance of all the functions more energetic, increasing in particular the power of producing heat, and thus bracing the constitution and rendering it more capable of resisting all noxious influences.† At the same time there is no more fruitful source of disease and death than cold; indeed, it seems probable that, even where the nature of the disease is to a certain extent influenced by the preceding occurrence of a temperature above the ordinary mean of the season, the initiative is taken by some sudden relative diminution of the bodily temperature, except of course in all such diseases as insolation, etc., which are

\* “If a person having warm hands will keep one plunged for some time in water near the freezing-point, it becomes chilled of course, but reaction will be observed soon to take place, and the hand will become red. If it be now taken out of the water and wiped dry, the individual being all the while in a cool atmosphere at 10° or 12° c., the hand will by and by begin to glow, and the feeling in it will be that of a temperature considerably above the heat of the other hand. Judging by the feeling alone, the hand seems hotter than the other; tried by the thermometer, however, it will be found to be cooler; or if it be applied to the other, it will at once be discovered to be below the temperature of the hand that was not chilled (“Animal Heat,” *op. cit.* p. 679).

† “Animal Heat,” *op. cit.* p. 673.



directly due to the action of a high temperature. Dr. Heberden was one of the first to point out the destructive influence of cold in his paper "On the Influence of Cold upon the Health of the Inhabitants of London," first published in the eighty-sixth volume of the *Philosophical Transactions*. In this paper he points out that the month of January 1795 was the coldest of which any regular account had been kept, the thermometer standing on the average at  $23^{\circ}$  in the morning, and  $29^{\circ}\cdot4$  in the afternoon ; while in the same month in 1796, which was the warmest recorded January, the thermometer stood at  $43^{\circ}\cdot5$  in the morning, and at  $50^{\circ}$  in the afternoon :—the result being, that in the five weeks commencing January 1, 1795, there were 2823 deaths, 717 of which were persons above sixty years of age ; while in the five weeks commencing January 1796 there were only 1471 deaths, but 153 of which were above sixty. In the *Annual Reports of the Registrar-General* there is to be found a very great amount of information of the same character. In the third *Annual Report* Dr. Farr expressly states : "The mortality rises progressively as the mean temperature falls below the mean temperature of London ( $50^{\circ}\cdot5$ ), the deaths in the week rising to 1000 and upwards"—from a weekly average of about 920—"when the temperature of night falls below the freezing-point of water ; and to 1200 when the *mean temperature* of day and night descends a degree or two lower than  $32^{\circ}$ .

The rise in mortality is immediate ; but the effects of the low temperature go on accumulating, and con-



tinued to be felt thirty or forty days after the extremity of the cold has passed away. The cold destroys a certain number of persons rapidly,\* and in others occasions diseases which prove fatal in a month or six weeks. The practical lesson taught by these facts is obvious. A great number of the aged, and of those afflicted with difficult breathing, cannot resist cold sunk so low as  $32^{\circ}$ . The temperature of the atmosphere in which they sleep can never safely descend lower than  $40^{\circ}$ ; for if the cold that freezes water in their chamber do not freeze their blood, it impedes respiration,† and life ceases when the blood-heat has sunk a few degrees below the standard." And again, in his *Eighteenth Annual Report* the Registrar-General says (p. 15)—"The winter of 1855 was a remarkably cold season, and the deaths amounted to 134,542; the average number of deaths in the five previous winter quarters was 103,022; so that the cold was probably the cause of more than 20,000 deaths." And so on throughout all of these reports, even where it is not expressly stated in the text, the influence of cold may be everywhere traced by the large increase of the mortality. This double relation of cold to *vitality*

\* "Pour que l'intensité de ces effets augmente, il n'est pas nécessaire que la température descende au-dessous du degré qui a commencé à les produire; il suffit qu'elle s'y soutienne" (Edwards, *op. cit.* p. 261).

† Obviously a careless expression. Cold does not impede respiration except by depressing the vital powers. When the process of dying commences then the respiration becomes impeded by secondary causes.

upon the one hand, and to *mortality* upon the other, affords a very apt illustration of what I have already said as to the same stimuli producing what we term healthy or diseased action, according as they act within certain limits, or in relative excess or deficiency to the powers of the system. I have shown that the vital agency by which the minor variations of the stimulus of external temperature are compensated is the nervous system; and there is every reason to suppose that these more serious organic changes, originating in a relative defect or excess of the same stimulus, and which develop themselves in various forms of what we term disease, terminating more or less suddenly in death or recovery, are also originated by the agency of the nervous system, which alone is capable of taking cognisance of this defect or excess, and of originating—either with or without the agency of the will—any organic movement in relation to it.

In considering the relation of the nervous system to the production of diseased action, to the cycles through which that action ordinarily runs when unaffected by treatment, and to the powers which we possess of modifying or cutting short this diseased action by treatment, we must never forget that the bodies of all animals are built upon one uniform plan, so ordered as to insure, as far as possible, not only life but safety to all, even at the expense of occasional discomfort to some; that in these relations, as well as in the cycles through which diseases ordinarily run, no account is taken of our reason, or of the appliances

of our social system ; but all things are so ordered as to be for the best possible good of an isolated irrational animal. Thus the physiological fact so wittily alluded to by Hudibras, that

“ No man is master  
Of his posteriors in disaster,”

ministers to the safety of many animals—such as the skunk, polecat, cuttlefish, etc.: fright in them is an involuntary occasion of their security, while in man it only produces discomfort. Again, if an animal receives a severe injury upon any part of its body, such an amount of excitement is lighted up through the agency of the nervous system as suffices for the removal of the injuring substance should it remain in the wound, and for the healing of the wound. In an isolated irrational animal it is impossible, in the case of a severe injury, that either of these occurrences could take place without profuse suppuration ; the excitement, therefore, in all such cases is equivalent to the production of this amount of suppuration. But the appliances of our social system have provided man with professional advisers who can remove the foreign body from the wound, and can bring together its torn edges, and thus do away in both cases with the necessity of any profuse suppuration : this, therefore, it is our object to prevent, and we are fortunately able to do so by the judicious employment of local and general sedatives. In one case which happened to myself the whole of the skin and cellular tissue were separated by a carriage-wheel from the entire posterior part of the leg of a girl about nine years of

age, from one side to the other, and from the middle of the thigh to the middle of the leg below the knee : the muscles and nerves of the popliteal space were as beautifully laid bare as ever I saw in any dissection ; and the popliteal artery lay exposed and beating in the bottom of the wound. Suppuration from so extensive a wound as that would probably have cost the girl her life or her limb ; it was therefore of the utmost importance to check both the local and general reaction. The edges of the wound were therefore brought carefully together, and cold was applied by irrigation over the whole length of the wound, night and day for the first four or five days, attending carefully to the feelings of the patient, so as not to permit the cold itself to become a source of discomfort and irritation. Internally small doses of tartar-emetic—the sedative which at the time first suggested itself—were continuously administered. Under this treatment reaction was completely kept in check, and the whole wound healed by the first intention, except the mere external edges, which had of course to be modelled off, and finally closed by the suppurative process. This of course amounted to the cutting short of a surgical, because external, disease ; and there is every reason to believe, though it may be more difficult to prove, that acute internal diseases can also be equally satisfactorily and effectually cut short by the appliances of art, and that chiefly by the use of sedatives, which, by soothing both the felt and the unfelt irritation of the nervous system, either wholly counteract or at least considerably diminish the effects of the mor-

bid stimulus, and thus check, either wholly or in part, that series of organic changes through which untreated diseased action must run, in accordance with the laws under which we live, before health is restored, modifying of course very importantly the danger to life. At other times, and in other cases, the morbid lesion is most efficiently remedied by stimulating applications to those sensitive nerves implicated in the origination of the disease ; while in still other and more chronic affections relief and cure can only be attained by a slow and gradual improvement of those internal secondary stimuli—as the blood, etc.—which when depraved give rise to various morbid phenomena, coupled with the use of nervine sedatives, tonics, or stimulants, so as to modify in the necessary manner the reaction of the nervous system, while it still continues unavoidably exposed to these morbid stimuli. At times these various modes of treatment may be beneficially combined in various ways.

“The nervous system,” as Travers says, “forms the portal as well as the herald of all diseased action ; and no altered action, of whatever description, can be instituted but by its medium.”\* It is equally true that no treatment of disease can be efficacious which has not a due regard to the agency of the nervous system in maintaining life by the action of the vital stimuli, and in originating disease when these stimuli are in excess or are deficient, simply by excess or defect in its

\* Travers on *Constitutional Irritation*, vol. ii. London 1835, p. 438.

natural reactions. The physiology of the nervous system is not yet sufficiently advanced to put us in a position to explain in each case exactly how this takes place ; there are, however, sufficient facts on record to prove the truth of this theory, and to enable us in some measure to understand how it may occur.

The researches of Claude Bernard and Brown-Sequard have shown that section of the sympathetic nerve in the neck is followed by hyperæmia of the side operated on, which, however, subsides considerably in a few days, as well as by an elevation of temperature in the same side, which is considerably more persistent. The vital properties of the tissues in the range of the divided sympathetic are also augmented : sensibility is increased and persists longer ; the sense of hearing seems more acute ; the secretion of cerumen, tears, and perspiration is increased ; chloroform anæsthesia occurs later in those parts than in others ; a galvanic current too feeble to act upon the other side produces contractions there ; after death the iris and the muscles remain longer contractile, cadaveric rigidity ensues later and lasts longer, and the commencement of putrefaction is therefore postponed.\* If the upper end of the cut portion be galvanised, after a time the vessels contract to their normal or less, and the temperature and sensibility diminished accordingly. Professor Bernard was led by this remarkable experiment to conclude that the sympathetic, in some of its fibres at least, was a vaso-motor

\* *Lectures on the Physiology of the Central Nervous System* Philadelphia 1860, p. 141.



nerve, and that its paralysis gave rise to hyperæmia and acceleration of the molecular change of the tissues, running readily into inflammation when the animal was debilitated by other operations or by sickness occurring spontaneously. He also argued that, as "it is known that injuries of the cerebro-spinal nervous system constantly produce a total or a partial diminution in the temperature of animals, either when a nerve has been divided or when the injury is made on the nervous centres,"\* therefore the sympathetic and the cerebro-spinal systems are opposed to each other in relation to their influence on animal heat, and therefore on the circulatory systems and on nutrition. And this fact of the antagonism of the two great nervous systems—the sympathetic and the cerebro-spinal—has been confirmed and to a considerable extent explained by the results of Professor Bernard's experiments upon the secretion of saliva by the submaxillary gland of the dog. Bernard found the submaxillary gland specially provided with two nerves which exercise a most important influence upon the circulation of the blood within the gland, and through it upon the secretion of the saliva. One of these nerves is a branch of the seventh nerve, consisting chiefly of the *corda tympani*. It is readily found as it separates itself from the lingual branch of the fifth nerve to accompany the excretory duct in its distribution throughout the gland. The other and antagonistic nerve is a branch of the sympathetic, and is distributed to the gland along with the ramifications

\* *Gazette Medic. de Paris*, vol. vii. No. 14, p. 227.



of the external carotid which supply it. So long as the gland is in its natural quiescent state, with all its nerves entire, the blood flowing through the veins is of the usual dark colour; but the application of any sapid body—as vinegar—to the tongue causes an immediate flow of fluid saliva into the mouth, while the venous blood becomes ruddy and tends to flow *per saltum*, as if the heart's impulse still acted on it. If now the tympanico-lingual nerve be cut across where it separates from the lingual, the venous blood remains black, and in spite of the application of vinegar to the tongue and the perfect sensation of its taste, the flow of saliva and ruddy colour of the venous blood never reappears. On the other hand, if the sympathetic filaments distributed to the gland be cut across between the ganglia and the gland, the blood becomes and remains permanently ruddy. When the gland is in repose, and the circulation is under the direct influence of the sympathetic nervous system, four times as long a period is required to collect the same quantity of blood from the veins as is necessary when the cerebro-spinal system is in action. This proceeds from the constriction of the capillaries produced by the sympathetic nerve, and their dilatation which is effected by the influence of the tympanico-lingual nerve, and that to such an extent that the blood passes into the veins without losing the cardiac impulse, so that it flows from them *per saltum* as if from an artery.\*

All this seems unquestionably to prove that each

\* *Journal de Physiologie de l'Homme*, Paris 1858, pp. 649, 658.

organ of the body may have a local circulation independent of the other organs of the body, yet capable of being influenced by them by reflex action through the nervous system ; also that there is a real antagonism between the two great nervous systems : the one—the sympathetic—presiding over ordinary nutrition, and tending to maintain the bloodvessels in their normal state of constriction, and when excited to constrict them still more ; while the other—the cerebro-spinal—has for its chief action the maintenance of the general *consensus* of the organism, and by propagating influences from one organ to another to antagonise the sympathetic system, and thus dilate the capillaries and permit the passage of a sufficiency of blood necessary for rapid and increased secretion, etc.\* There is thus, therefore,

\* In his *Experimental Researches*, New York 1853, pp. 73 to 77, Dr. Brown-Sequard has adduced various reasons for concluding that—"1st, An injury of the nervous system may produce in the parts, which then become paralysed, either an increase or a diminution of temperature.

"2d, The sympathetic and the cerebro-spinal nervous system appear not to be different one from the other in this respect.

"3d, The degree of temperature of paralysed parts depends on the quantity of blood they receive ; and this quantity varies according to the size of the arteries and capillaries of these parts.

"4th, It is a fact hitherto unexplained that the arteries and capillaries may be either dilated, normal, or contracted in paralysed parts." Again, in his *Physiology and Pathology of the Central Nervous System*, Philadelphia 1860, he states, at p. 146, that "a section of the lateral half of the spinal cord near the *medulla oblongata* produces this curious effect : on the side injured, the bloodvessels of the extremities are paralysed ; while on the opposite side they are spasmodically contracted." Now it is

a positive certainty that the circulation of any organ or part of the body may be influenced by a reflex action through the nervous system ; and we shall by and by see that there is a great probability that many diseases are thus originated.

Recent inquirers have also attempted to show that there is another mode in which the nerves of an organ may be influenced and morbid states originated—viz. by what has been termed *inhibition*. In the course of his inquiries and experiments on the functions of the spinal cord, Pflüger was led to suppose that certain nerve phenomena were dependent upon the existence of a

quite true that the physiology of the central nervous system is as yet in its infancy, and we also know that the connections between the cerebro-spinal and sympathetic systems are so numerous and complicated that it is and must be extremely difficult, if not impossible, to unravel the effects of injuries, accidentally or experimentally inflicted, operating at a distance ; so that one positive experiment, such as the above, proving the antagonism of the two systems, is worth a hundred, operating more indirectly, proving the reverse. Bernard himself points this out in the paper quoted.

Further, this antagonism of the two great nervous systems does not really involve the existence of two distinct kinds of nervous force. The galvanic current, which, when transmitted along the upper end of the sympathetic divided in the neck, does away with all the effects of such a division, is not nervous force but simply a stimulus. It is therefore simply a stimulus transmitted through the sympathetic system that maintains the capillaries in their normal state of contraction, and the origin of this stimulus is most probably to be found in the action of the various vital stimuli, particularly temperature, the action of which, when reflected over the various organs by means of the sympathetic system, produces and maintains that natural healthy tone of the organism which we know to be braced or relaxed

special system of nerves whose sole function was to arrest or diminish action.\* From a repetition of Pflüger's experiments Lister concludes "that one and the same afferent nerve may, according as it is operating mildly or energetically, either exalt or depress the functions of the nervous centre on which it acts. It is, I believe," he says, "upon this that all inhibitory influence depends; and I suspect that this principle will be found to admit of a very general application in physiology."† The following is given as an example of inhibitory action:—The poles of a galvanic apparatus were fixed to the spinous processes of the ninth and

by the action of cold and heat, independent of any other action which these may have, and which, in the still-born child, we feel gradually growing beneath the repeated alternate applications of heat and cold, long before sufficient strength has been attained to produce a ery, or even to do more than effect a few gasping inspirations. Moreover, the experiments of Bernard upon the secretion of the saliva show that the stimulus of some sapid body, perceived by the nerves of taste and reflected through the cerebro-spinal system upon the gland, is the means employed to antagonise the influence of the sympathetic, and there is not the slightest excuse for regarding this as nervous force. So that we may perhaps regard the one system—the sympathetic—as especially developed for the purpose of co-ordinating the action of the ordinary, necessary, and permanently-acting vital stimuli; while the other—the cerebro-spinal—is differentiated for the co-ordination of the organs with each other, and of the organism with the external world. Neither of these systems transmits forces, but only impressions of different characters, which are perceived, and as it were acted upon, by the one intelligent force which is everywhere present.

\* *Ueber das Hemmungs Nervensystem für die Peristaltische Bewegungen der Gedärme*, Berlin 1857.

† *Proceedings of the Royal Society*, No. 32, p. 367.

twelfth dorsal vertebræ of a rabbit, currents were then passed through the spine (and cord, of course), and produced "complete relaxation and quiescence of the small intestines, which had been previously in considerable movement, while the muscles of the limbs were thrown into spasmodic action ; but on the discontinuance of the galvanism the previous intestinal motion returned." It was also found that the violent natural struggling of the rabbit, when the intestines were moving freely, was followed by absolute and universal quiescence of those organs for several seconds, proving that inhibition could be produced naturally as well as artificially. These experiments may be regarded as conclusively proving that the energetic operation of an afferent nerve—or, as Dr. Handfield Jones has well observed, even its being injuriously affected by some impression made upon it\*—may produce physiological and pathological phenomena, or even prevent their occurrence—as when drunkards or insane persons are exposed to cold, etc., without suffering from any of its usual effects. But while it is well to remember this as assisting to explain some otherwise obscure cases, I hold that by far the larger proportion of those cases which have been referred to inhibitory action are more easily explicable otherwise, and depend, as Brown-Sequard believes, upon reflex action affecting primarily the capillary circulation, rather than upon some peculiar nervous action by which the function of

\* *On Functional Nervous Disorders*, London 1864, p. 10 ; and *British Medical Journal*, February 5, 1859.

the nerve-cells is enfeebled and depressed without any alteration in their nutrition. As an example of inhibitory action, Dr. Jones refers to the production of amaurosis from dental irritation, the blindness ceasing after the extraction of some teeth which had grown irregularly. He also quotes a case of Mr. Lawrence, also related by Dr. Watson in his *Lectures*, in which the extraction of a carious tooth, with a splinter of wood projecting from one of its fangs, procured the restoration of the sight of the eye of the same side, which had been entirely lost for thirteen months—adding: “In such cases the paralysis of the retina or of the optic tubercles may fairly be designated inhibitory;”<sup>\*</sup> and again—“It is almost impossible to believe that a contraction of vessels should be so persistent as the hypothesis—reflex action acting through the vaso-motor system—requires. Can we suppose in the case of amaurosis, above cited that the *arteria centralis retine* was spasmodically occluded for thirteen months?”<sup>†</sup> For my part, I think it seems just as likely that the circulation through the retina or the optic tubercles was enfeebled, as that the functions of their nerve-cells were directly debilitated by purely nervous influence.

Be that as it may, however, sufficient evidence has been given to show the possibility of morbid actions being set up through the nervous system, and the high probability that these morbid actions are produced by

<sup>\*</sup> *Op. cit.* p. 11; and Watson's *Lectures*, etc., 4th ed. London 1857, p. 351.

<sup>†</sup> *Op. cit.* p. 14.



interference with the circulation—and of course with all the phenomena thereon dependent — caused by reflex action through the nervous system ; that reflex action being initiated by the action of some stimulus, which may be one of the vital stimuli, acting in excess or defect, or one closely allied to them ; the very production of morbid phenomena being rendered possible solely by the machinery and the influences necessary for the maintenance of the physiological phenomena of health, a capacity for living implying, therefore, of necessity, a capacity for becoming diseased.

“The human body, in which there is no mover that can properly be called FIRST, or whose motion depends not on something else,”\* is too complex a system of vitality for us always and at all times to be able readily to detect the particular stimulus at fault. Therein lies unquestionably much of the individual skill of the physician, which, moreover, has more room for exercise in regard to chronic diseases than to acute ones. Through the writings of Brown-Sequard and others the attention of medical men has been so much directed to the reflex influence of the nervous system, and the improvements in the mechanical and other aids to medical diagnosis have in late years been such that mistakes, which were formerly rectified by chance as it were, could hardly now be made. Take, for example, the remarkable instance already alluded to, in which a splinter of wood, projecting from one of the fangs of the first molar, caused amaurosis of the eye on that

\* Whytt *On Vital Motions*, Edin. 1751, p. 270.



side. The patient in that case "was a man thirty years of age, who was suddenly attacked with violent pains in the left temple near the eye, and in that side of the face generally. The pain continued to recur from time to time, and at length he discovered that he was blind in the left eye. By and by the cheek swelled, and some spoonfuls of bloody matter were discharged by a spontaneous opening in the lower eyelid, and then the pain subsided ; but after some months it returned with great severity. The patient then went to Wilna, with the intention of having his eye extirpated, and consulted Professor Galenzowski, who found the left eye totally insensible to light, with the pupil dilated, and no other visible alteration. He ascertained, however, that the first molar tooth on that side was carious. It had never caused the patient much uneasiness ; and the toothache, which he *had* occasionally suffered, had not been coincident in point of time with the pains in the head and eye. Dr. Galenzowski thought fit to extract this tooth, and was greatly surprised at seeing a small substance protruding from the extremity of its fang. This proved to be a little splinter of wood, about three lines in length, which had perforated the centre of the tooth, and had probably been introduced in using a wooden toothpick. A probe passed from the socket into the antrum, from which a few drops of a thin purulent fluid escaped. The pain ceased almost entirely, and on the same evening the eye began to be sensible to light. The vision gradually improved ; and on the ninth day from that time, after thirteen

months' blindness in that eye, he was able to see with it as perfectly as with the other."\* I think that, with our present knowledge, such a case (it happened about forty years ago)† would hardly have been permitted to go on for thirteen months without at least trying what effect would be produced by the removal of so evident a source of irritation to a branch of the trigeminal nerve. Hippocrates, Beer, Wardrop, and Lawrence‡ himself, have given many instances of paralysis of the retina arising from affections of the trigeminal nerve; and these cases have of late years|| been multiplied, and their nature so thoroughly investigated, that it is now almost impossible to err concerning them—the morbid state which used to be obscurely explained as sympathetic being now distinctly recognised as produced by a usual—if not *the* usual—source of all morbid actions, reflex action through the nervous system. Galenzowski remarks that the chief peculiarities of this case were—1st, That the entrance of the foreign body was not noticed at the time; and 2d, that so much disturbance arose from a local irritation so slight as hardly to be perceived. It seems hardly fair to call a

\* Watson's *Lectures*, *loc. cit.*

† *Vide* Lawrence *On the Diseases of the Eye*, Lond. 1833, p. 562.

‡ Lawrence, *op. cit.* p. 129, etc.

|| Brown-Sequard, in his *Physiology and Pathology of the Central Nervous System*, pp. 157 and 158, quotes several cases of amaurosis from irritation of the dental nerves cured by extraction of the teeth; and at p. 167 he also quotes several cases in which amaurosis arose from worms in the intestines, and were cured by their expulsion.

local irritation sufficient to cause an abscess of the antrum by the term slight ; but be that as it may, it is matter of daily experience that the irritation of a decayed tooth is by no means always felt locally, but is very often reflected as a neuralgia referred to the head or shoulder, affording an illustration of what is termed an “unfelt irritation”—that is, an irritation not felt locally, but producing, through the agency of the nervous system, various morbid phenomena in parts more or less distant from the active cause. These cases at the present day are so well known that it is scarcely necessary to give any further illustration of them. Graves, in his *Clinical Medicine*, relates a case of severe cough which had resisted all ordinary treatment, and was cured by the expulsion of a tapeworm.\* Dr. Jones gives a case in which a married lady had suffered for a considerable time from a spasmodic pain in the womb, which ceased completely on the extraction of a tooth which had not caused any material annoyance.† Sir Benjamin Brodie mentions a severe pain in the lumbar region caused by acidity of the stomach, and cured immediately by taking magnesia.‡ I myself have repeatedly seen pains in the loins, severe cramps of the legs, irregular action or violent palpitation of the heart, all caused by acidity of the stomach, evinced by no other symptoms, but proved to be the efficient cause by the *immediate* cure by an antacid

\* *Op. cit.* p. 244.

† *Functional Nervous Disorders*, p. 8.

‡ *Works*, London, 1865, vol. iii. p. 650.

draught. I am also acquainted with a whole family, all of whom except one, the *pars minoris resistentiæ* of whose nervous system lies elsewhere, suffer in their legs when their stomachs get out of order ; and that in every degree, from a mere feeling of stiffness, as if the legs did not belong to them, up to complete inability to walk, stand, or even move the feet. There is nothing rheumatic or gouty in this peculiar affection ; it does not yield to remedies employed with either of these views ; but it yields either at once or more slowly, according to its severity, to hepatic deobstruents and tonics. Similar cases are of daily occurrence, and are well known to the profession.\* At other times the irritation itself is most felt, while the morbid action of reflex origin is more or less completely latent : this, however, only occurs when it is some internal organ that is morbidly affected. Thus in cases of severe burn death is frequently caused by latent inflammation of some internal organ ; in burns of the lower limbs the intestines are peculiarly apt to be affected, ulceration of the duodenum being very frequently† observed. The reflex origin of these affections has been in a manner proved by Brown-Sequard, who found that

\* Robert Whytt, in his *Observations on Nervous Disorders*, Edin. 1765, gives many curious instances of what he calls the Sympathy of the Nerves ; and a whole host of such observations have been collected by Henlé in his *Rationelle Pathologie*, Braunschweig 1855, 3d ed. vol. i. p. 176, etc.

† *Vide* papers by Mr. Long, Mr. Curling, and Mr. Eriehsen, quoted by Brown-Sequard in *Physiology and Pathology of the Central Nervous System*, p. 161.

when the spinal cord was divided at the level of the third or fourth lumbar vertebræ, so that no irritation could be propagated to the head, chest, or most of the abdomen, no marked alteration was found in an animal killed two or three days after one leg was burned except in the bladder, rectum, and neighbouring organs ; while when the section of the cord was made as high up as the third dorsal vertebræ, the abdominal viscera, two days after one leg had been burned with boiling water, were found in a state of congestion very much resembling inflammation in many parts, with serous infiltration and echymosis.\* Whether, however, the irritation is felt or unfelt, there is this peculiarity attending the morbid actions thus originated, that a precisely similar cause may produce diverse morbid lesions in different cases. Thus I have quoted from Lawrence a case in which dental irritation produced complete amaurosis, but Dr. Emmerich relates another case in which hyperæmia of the eye, which had resisted for a year many kinds of treatment, was immediately cured by extraction of a carious tooth.† I have just referred to a case of Graves in which a tænia produced a violent cough ; but Petrequin mentions a case of *amaurosis* immediately cured by the expulsion of a tænia ; in the *Journal l'Experience* (vol. vi. p. 47, 1840) there is a case of a woman who, for three months, was *paralysed of the two upper limbs*, and who was cured immediately

\* *Op. cit.* p. 171.

† Quoted by Schiff in his *Untersuch. zur Physiol. des Nervensystem*, 1855, p. 115.

after the expulsion of a *tænia*. Ward relates two cases of rapid cure of *deafness* after the expulsion of *lumbrici*; other similar cases are mentioned by Davaine (*Traité des Entozoaires et des Maladies Vermineuse*, Paris 1860); while Mondière relates a case of immediate cure of *aphonia* after the expulsion of sixty *lumbrici* (*Gaz. des Hôpit.* p. 208, 1843).<sup>\*</sup> These cases might be indefinitely varied and infinitely multiplied: enough, however, has been given to show that a similar cause does not always produce the same lesion, and in like manner it might be shown that the same lesion may be produced by various and dissimilar causes. Thus amaurosis is produced by dental irritation or by worms in the bowels, etc. This dissimilar reaction in different individuals to the same stimulus, or the similar reaction in one individual to different stimuli, arises from there being in each organism some one part weaker or more irritable than the rest, and this peculiar irritability may either be temporary, arising from some special cause, or it may be permanent, and in this case may be either inherited or acquired. This weak or irritable part of the organism was named by the ancients the *pars* or *locus minoris resistentiæ*, from an idea they had, in accordance with their pathological doctrines, that any injurious influence attacking the organism seized upon that part which was least capable of resisting it. In accordance with the pathological opinions I have just been advocating, we take a somewhat similar view of

<sup>\*</sup> Brown-Sequard *On Paralysis of the Lower Extremities*, London and Edinburgh 1861, p. 10, *note*.



the matter, though we explain it differently. Such an irritable organ exhibits its nervous connection with every part of the body by being at once affected by every possible stimulus of an injurious character: thus those who have carious teeth get toothache from every imaginable cause—from cold, overheating, mental emotion, errors of diet, etc. ; those who are prone to abortion are liable to have the contractions of the uterus brought on, not by any one particular cause, but by anything which can affect the body or mind injuriously. Thus too it is quite common to hear patients accustomed to the continual relapse of one complaint speak, upon any exposure or any unusual excitement, of dreading a recurrence of *their* headache, *their* cough, *their* diarrhoea, etc. We may therefore suppose that the injurious influence affects the body generally through the nervous system acting painfully or injuriously only upon the *pars minoris resistantiæ*,\* just as we see a general sensation of shuddering running over the skin produce positive pain in ulcerated parts, or where general febrile heat excites an itching or burning sensation, in local and ordinarily painless skin affections, or in recent sears, or when the eruption of small-pox becomes to a comparatively considerable extent localised upon the sear of a recent blister, etc. Or we may suppose that the weak organ—weak, because its vitality is from some cause enfeebled—produces a debilitating effect upon the nerves by means of which it is connected with those parts of the central nervous system in which it becomes

\* Henlé, *op. cit.* vol. i. p. 132.



co-ordinated with the other organs of the body, and is thus rendered liable to be affected by injurious impressions conveyed from them, which have no such disturbing effect upon healthy nerve tissue. There is reason to suppose that both of these modes may be employed in the production of morbid action. As yet we do not know positively how any form of reflex action is produced; it is probable that now that inquiry has been so much directed to the mode of action of the nervous system, we may by and by attain some more exact knowledge regarding it. Whether we do or not, however, is for us, as therapeutists immaterial; it is sufficient for us to know that morbid actions are produced through the nervous system by what we term reflex action, and that by acting upon and through the nervous system, as the great and only source of co-ordinate action in the organism, we are enabled to cut short and modify these morbid actions.

This much, however, we do know of the natural constitution of the body, that a congeries of cells, closely co-ordinated and connected together by nerves and bloodvessels, form an organ destined for some one special object; that a series of such organs, likewise closely co-ordinated and connected together by nerves and bloodvessels, form an organism which is reckoned to be higher in the scale of being the more fully developed those organs are which extend its relative connection with the external world; while for the necessary purposes of life some of these organs are also more closely co-ordinated together as subordinate sys-

tems, as the chylopoietic system, the genito-urinary system, the several muscular systems—as those of the upper and lower extremities, etc.—the several parts of which, when stimulated at all, and still more when over or injuriously stimulated, are most apt and most ready to act first upon other parts of the same system, and in such cases I would be inclined to suppose the latter of the two modes of action—the more immediate action through the co-ordinating ganglia or centre—to be the one selected. Thus Dr. Gairdner mentions the case of a man whose œsophagus was divided, and who yet had a secretion of from six to eight ounces of saliva during the injection of a meal of broth into his stomach;\* and Brown-Sequard has several times observed the injection of warm water into the rectum of a dog having a gastric fistula produce a secretion of gastric juice. The late Dr. Chapman of Philadelphia relates two cases† of dyspepsia (in one of which the gastric juice is said to have been extremely corrosive) which were cured almost immediately after the extirpation of painful piles.‡ Brown-Sequard knew a case in which vomiting of a great quantity of unduly acid gastric juice took place under the irritating influence of worms in the rectum.§ Robert Whytt says that “the pain of hæmorrhoids is sometimes accompanied by a sickness of the stomach

\* *Edin. Med. and Surg. Journal*, vol. xvi. p. 355.

† *Central Nervous System*, p. 153.

‡ *Lectures on the more Important Diseases of the Thoracic and Abdominal Viscera*, 1844, p. 216, quoted by Brown-Sequard, *loc. cit.* p. 154.

§ *Loc. cit.* p. 154.

and faintness.”\* A secretion of milk is produced by irritation of the uterus or vagina, as well as of the skin of the mammæ; permanent contractions of the uterus are most readily produced by suckling the child, and every parturient woman knows how certainly afterpains are produced by each attempt to suckle during the first few days after birth; while every accoucheur knows how certainly the uterine contractions are brought on and strengthened by dilating the *os uteri* or *os vaginæ* according to the stage of the birth. In regard to these facts, and others similar to them, we assume it to be probable that the nerves of the organ of each separate system are, for the necessary purposes of life, more closely connected with each other than with those of the other systems, and that is the reason why irritation of the vagina produces a flow of milk from the mammæ rather than a flow of mucus from the nose, etc. But in regard to the muscular systems we can refer to anatomical proof that the reason why our leg is involuntarily withdrawn when a drop of hot water falls upon the foot is because the sensitive branches of a nerve are distributed to the part of the skin moved by the motor branches of the same nerve, the central terminations of both being intimately connected in the ganglionic cells of the cord;† and for the same reason, as we shall presently see, morbid stimuli affecting the skin very readily act injuriously on the motor nerves,

\* *On Nervous Disorders*, Edinburgh 1765, p. 26.

† Schröder van der Kolk *On the Spinal Cord*, New Syd. Soc. ed. pp. 6 and 12, etc.

locally if the cause be local, but more generally when the cause is general.

Again, certain of these systems seem more prone to sympathise, as it is termed, with certain others than with the rest. Thus, the stomach and the brain mutually affect each other; irritation of the stomach and bowels may produce complete amaurosis or merely dilated pupil, grinding of the teeth, restless nights, horrible dreams, nightmare, various horrible nervous sensations bordering upon insanity, and which may be termed daymare, or even insanity itself, which very often appears to depend upon the retention of black, foetid, or otherwise morbid stools, being rapidly cured by their evacuation either spontaneously or by purgatives: witness the fame of anticyra and hellebore.\* Irritation of the stomach is well known to affect the action of the heart; while morbid affections of the heart are equally well known to affect the functions of the stomach, producing various forms of dyspepsia. Renal disease also affects the stomach morbidly, producing sickness; and Bernard and Barreswil have shown that this is in a great measure caused by the stomach secreting vicariously for the kidneys,† as it is also known to do occasionally for the uterus. All these facts, the numbers of which might be very readily largely increased, serve to show that, besides the close co-ordination of each organ

\* *Vide also Seele und Leib in Wechsel Beziehung zu einander*, by Schroeder van der Kolk, Braunschweig 1865, p. 120, note, etc.

† *Archiv Generales*, Avril 1847, p. 449.

with those others belonging to the same system, the ordinary maintenance of the healthy balance of life requires that certain organs of different systems should be more closely co-ordinated, and though the reasons for this may not be very apparent, the fact that such is the case is so, and affords a very evident explanation of how morbid affections of the one organ can effect the other injuriously.\*

There are other cases, again, which seem to show that the injurious influence affects primarily the whole body, but only becomes localised in the *pars minoris resistentiæ*, as cold, applied locally, produces a general feeling of shivering, but becomes localised as a eryza, a diarrhœa, a tonsillitis, or a pneumonitis, etc., as the case may be.

Cold, when applied locally, produces primarily a sensation of numbness, and if this numbness is produced by plunging the hand into snow or ice-cold water, we find that there is also a diminution of power not only of the small muscles immediately affected, but also of those connected with the forearm, which are deeply covered and quite removed from the direct action of the cold. Cold therefore produces first a

\* Dr. Cain of Charleston (*Southern Journal of Medicine*, 1847, p. 377) relates cases which show that eroup may be produced by reflex action starting from the stomach. He clearly exposes the *modus agendi*, basing it upon many facts and sound reasonings. This is quoted by Brown-Sequard in his work on the *Central Nervous System*. Want of opportunity prevents my giving these reasonings or explaining how they bear upon my own statements.

numbness or paralysis of the sensory nerves by its direct action, and second a paralysis of the motor nerves by its reflex action through the nervous system; and if applied to one hand it also produces, through the nervous system, contraction of the bloodvessels of the hand left out of the water;\* and it is to this action of cold that we are to attribute its morbid action in stopping the catamenia, as well as its curative action in stopping hemoptysis, etc. Examples of reflex paralysis of motor muscles from the action of cold are common enough, and have been frequently recorded and still more frequently observed, particularly in relation to the forearm and face. Dr. Graves† relates one remarkable case in which the impression made by cold upon the terminal branches of the fifth nerve produced amaurosis, or at least so impaired a state of vision “that every thing seemed as if he was looking through a gauze veil”—a condition of vision so precisely resembling that produced by belladonna that it seems more probably to have been produced by an affection of the iris through the ophthalmic ganglion, which is so intimately connected with the fifth pair, than by any affection of the retina itself, which could only have been produced remotely through the central organs. This man narrowly escaped the active treatment usual in those days, but was cured by stimulation of the skin of the forehead and temples. When the influence of the cold is

\* *Vide* the experiments of Dr. Brown-Sequard and Dr. Tholozan, *Pathology of the Central Nervous System*, p. 146.

† *Op. cit.* p. 398.



exerted over a larger surface of the body its effects may be of a relatively more intense character. Thus Dr. Copland (article "Paralysis" in his *Dictionary of Medicine*, p. 21) relates a case in which "a general paralysis of the powers of voluntary motion occurred immediately after prolonged exposure to cold and wet; the functions of the brain were unaffected, and no evidence of inflammation or of congestion in the spine could be detected." In this case the sensibility of the surface and of the sphincters remain unaffected: he received no benefit from active treatment, and was ultimately cured by warm baths and stimulating applications to the surface.

Hippocrates classified cerebral hæmorrhages under winter disorders. Ferrario, in his inquiry into the statistics of sudden deaths, extending over a period of 56 years—from 1774 to 1830—clearly shows that this relation still exists;\* the records of Heberden, confirmed by the more recent reports of our Registrar-General, also prove that apoplexies and palsies have always been, and are still, most fatal in this country in winter; while in 1705 and 1706 they were so frequent a cause of death at Rome that Pope Clement XI. ordered Lancisi to study the malady, and the result recorded in his works is, that the source of the disease lay in the irregularities and rapid transitions of temperature, which

\* *Statistica dell Morti Improvise*, etc., Milano 1834, p. 57-212. Of 10,432 such deaths, 3281 died in the quarter ending February 28; 2633 in that ending May 31; 1915 in that ending August 30; and 2603 in that ending November 30.



he says "relaxed the solids and favoured the influence of the aerid blood"\*—that is, as we understand it nowadays, in the reflex action of cold applied to the surface of the body.

We know that one of the earliest effects of extreme cold upon the general system has been said to be a remarkable and overpowering drowsiness; and those who attribute this comatose and quasi-apoplectic state to the direct action of the cold alone explain it by saying that the chilling of the surface and extremities drives the blood inwards, causes it to accumulate internally, and increases the flow of blood towards the head. But we know that "though drowsiness is a very common consequence of exposure to severe cold, it is by no means a necessary consequence of it. Dr. Currie, in his *Medical Reports*, gives a very interesting account of the shipwreck of an American vessel on the coast of Ireland. Most of the crew, fourteen in all, were immersed to a considerable depth, for twenty-three hours, in water of which the temperature was believed not to exceed 33° or 34° of Fahrenheit; and he states expressly that none of the men were drowsy, and that in no one of the three who perished was death preceded by sleep."† The simple mechanical theory of the driving of the blood inwards falls therefore to the ground, and we are compelled to look for an explanation of the occurrence of drowsiness to the ordinary vital relations of the organism. Exhaustion of the

\* *De Subitaneis, Mortibus*, Romæ 1709.

† Watson's *Lectures*, vol. i. p. 89.

nervous system, induced by protracted functional activity, is well known to be an active cause in producing sleep, which may come on amid the roar of cannon, even in those unaccustomed to the sound. Thus it is on record that during the heat of the battle of the Nile some of the boys who were over-fatigued fell asleep upon the deck ; and I myself was acquainted with a late officer of artillery, who fought his first battle on the plain of Waterloo, and who, overpowered with fatigue, fell asleep beneath his gun while it was fired over him. Under these circumstances it is the purely cerebral functions which are the first to give way ; and this explains why, “during fatiguing marches, as in the retreat to Corunna, it has been repeatedly noticed that whole battalions of infantry have slumbered whilst in motion. Muleteers frequently sleep on their mules, coachmen on their boxes, and postboys on their horses ; and factory children, before the shortening of the hours of work, were often known to fall asleep whilst attending to their machines.” \*

Whenever, therefore, there is, from any cause whatever—such as fatigue or the abuse of spirituous liquors, etc.—functional exhaustion of the nervous system, the cerebrum is, under the ordinary circumstances of physical health, the *pars minoris resistentiæ*, and liable to become morbidly congested by the reflex action of cold ; this congestion may be only sufficient to produce confusion of thought, with which may be conjoined more

\* *Cyclopædia of Anatomy and Physiology*, article “Sleep,” vol. iv. p. 680.

or less paralysis of some of the external muscles, or it may go on to that fatal drowsiness and sleep from which too often the unfortunate sufferer wakes no more. It is a frequent observation in cold weather that cold increases the intoxicating effect of spirituous liquors; it would be more true to say that previous indulgence in these liquors increases the stupifying effect of cold. A remarkable instance of the benumbing effect of intense cold upon the mental faculties is related by Captain Parry in his *Journal*; it refers to two young gentlemen who had gone out to look for one of the seamen who was nearly lost in the snow, and of whom Captain Parry was anxious to make inquiries. "When I sent for them into my cabin, they looked wild, and spoke thick and indistinctly, and it was impossible to draw from them a rational answer to any of our questions. After being on board for a short time the mental faculties appeared gradually to return with the returning circulation; and it was not till then that a looker-on could easily persuade himself that they had not been drinking too freely. To those who have been much accustomed to cold countries this will be no new remark, but I cannot help thinking (and it is with this view that I speak of it) that many a man may have been punished for intoxication who was only suffering from the benumbing effects of frost; for I have more than once seen our people in a state so exactly resembling that of the most stupid intoxication, that I should certainly have charged them with that offence had I not been quite sure that no possible

means were afforded them on Melville Island to procure anything stronger than snow water." Another equally remarkable case is related by Dr. Tilbury Fox in the *Lancet*.\* He entitles it "A Case of Delirium Tremens caused by Exposure to Cold and Wet." "Mr. A., aged forty-five, a very temperate, steady, active man, of low stature and possessing a stout thick neck, the youngest and only surviving son of seven, five of whom died suddenly of cerebral disease (in fits), one paralysed, a second in much the same state as this, and who is said to have had delirium tremens, and to have died in three hours.

"Mr. A. got up to go about his usual business at 6 A.M. on the 30th of March (on which day there was a snow-storm), in his usual health. He took scarcely any breakfast (this being not uncommon with him), came home and wrote for an hour and a half, seated before a good fire, had half a pint of beer, and went out with his horse and cart at 11 A.M. As it was his 'busy day,' he had a good many places to go to, and a good deal of worry. At mid-day he returned (having been out about two hours), perfectly wet through from head to foot, cold, and shivering very violently. He had not taken anything since he left home at 11 A.M. After putting his horse and cart away, he went indoors, when he had a few words of dispute with some one upon business matters. Soon after a severe attack of shivering came on; he said he felt very numb all over, and became quasi-delirious, insisting upon going home. He did not appear to know his wife, and

\* For 1859, vol. i. p. 457.]

fancied he was in a strange place. He had some hot brandy and water. At times he was perfectly rational, and then complained of pain in the palm of the right hand. He could walk perfectly well, and had no headache, but his feet were cold. He lay down on the sofa, and had hot bottles applied to his feet. At half-past 3 P.M. I found him lying on the sofa, with his eyes closed, and apparently dozing. He did not notice my entrance; but when spoken to, that his attention might be aroused, he was much annoyed to think that I should intrude upon him. He again insisted upon going home, and wanted his wife, desiring 'the women to go away from him, and those people to leave off picking his hand,' etc. When asked if he would go to bed, he said 'he was not to be gammoned; he was not going to any other but his wife's bed,' etc. When his attention was particularly called to any point he for the moment was quite sensible, but immediately relapsed into an illusive strain. There was present the peculiar mental state of delirium tremens—*i.e.* his attention was easily aroused, but could not be fixed. His judgment was quick, immediate, but incorrect. His allusions were not confined to one subject. Face slightly flushed; extreme shivering at times; pulse small, slow, deliberate—60 only; surface cool, especially the hands and feet; tongue tremulous, flabby, and covered with a creamy fur; no paralysis at all; pupils moderately dilated, sluggish, conjunctivæ slightly suffused.

In lucid moments, when aroused, he said he had no headache, but complained of tingling in the palm

of the right hand. When his attention was particularly called to the fact that his wife was near him he said 'All right,' but it is doubtful if he recognised her. He was not at all violent. General sensibility seemed normal; reflex action perfect. Delirium tremens was diagnosed. The treatment consisted in the exhibition of an effectual emetic, with the view of exciting the action of the skin, and the application of a very large mustard poultice to the neck. He was well wrapped up; and after the emetic had fully acted, which it did between 6 and 7 P.M., he had a comfortable sleep, and awoke quite himself again, with the exception of feeling a little weak."\* In this case there seems to have been a true delirium, without paralysis, arising from exposure to cold. In the next case, which I shall presently relate, there was no delirium, nor any apparent disturbance of judgment, or confusion of thought; there was, however, slight paralysis of all the limbs, but particularly of the right upper extremity, along with that

\* In his remarks upon the case Dr. Fox states that delirium tremens is chiefly a disease of northern, cold, raw, and damp climates, where strong drinks are required to keep up the animal temperature; but that the "*vera causa* is to be looked for in the conditions of temperature and the like, which indeed is the more philosophical argument." No doubt delirium tremens arises from various causes which exhaust the nervous system, and lay open the system to the injurious action of various other stimuli, such as cold, etc.; but there is also a direct toxæmic delirium produced "*à potu*" alone, and it is not philosophic to deduce that from the injurious action of temperature, but the reverse. It is to be wished that the term delirium tremens were restricted to the latter class of cases alone.



commonest of all mental phenomena connected with apoplectic seizures, the loss of memory of certain words.

The case referred to was that of a gentleman aged seventy-eight, who, tempted by the warm weather in the very beginning of May 1855, divested himself of his warm winter under-clothing, and on Saturday the 12th of May was exposed, in the course of his daily avocations, to a severe chilling blast. At family worship on the morning of the 13th it was observed that, although fluent both naturally and from long habit as a clergyman, yet he broke down for want of appropriate words. His gait was also less firm and steady than usual, and it was ascertained that he had some difficulty in dressing himself from numbness of his fingers. When I saw him, in the course of the forenoon, all his functions were natural, his tongue clean, and his pulse of fair strength ; but though able to walk without positive staggering, his gait was much less firm than usual, his fingers were numb, and he had so far lost the power of his right arm that when desirous of placing any object, such as a paper-knife, on the table beside him, he was wholly unable to do so, the knife either falling on the floor or being jerked spasmodically on to the table. I also found that he had been attempting to write a letter, but had broken down completely for want of words ; the few lines he had written were scratchy and irregular, very different from his usual firm handwriting, and quite unintelligible. He was perfectly aware of his peculiar



condition, but complained of no headache nor any other symptom other than those referred to. The case was at once diagnosed as one of reflex paralysis, arising from exposure to cold, and was treated accordingly by warm hip-baths, warm clothing, and a little brandy and water occasionally. In a few days he was quite restored to his usual robust health.

It is not always easy to show what special cause constitutes any particular organ the *pars minoris resistentiæ* for the time being. The foregoing case, I conceive, presents an example of one in which all the organs were in a state of well-balanced health, and in which the reflex action of the injurious impression made upon the extremities of the sentient nerves was for that reason confined to the cerebro-spinal system, which may well be supposed to have begun to yield under the pressure of advancing age. The following case, also relating to the same gentleman, affords an instance of the injurious influence of pre-existent disease in localising morbid reflex action. This gentleman in the early spring of 1860, being then not quite eighty-three years of age, suffered from an ordinary catarrh, from which he was gradually recovering, when, on the morning of the 19th of April, he imprudently exposed himself to cold by waiting for an hour before breakfast in a cold railway station; he thus received a severe chill, from the effects of which he did not recover all day, though no definite symptoms presented themselves beyond a certain amount of mental depression. On going to bed at night he declined all assistance, but was shortly after-

wards heard to fall, and was found lying on the floor unable to rise but perfectly sensible. He explained that in attempting to undress he had felt his fingers numb and his limbs powerless, and that in the course of his attempts he had slipped from his seat to the floor; he was perfectly sensible, and when put to bed was apparently quite comfortable, but all his limbs were more or less numb and powerless. In the course of the night considerable effusion took place into the lungs, which for some hours threatened suffocation, and could be heard gurgling up and down in the bronchi; towards morning this all disappeared, being partly spat up and partly absorbed. As this effusion disappeared, the signs of capillary bronchitis became gradually developed, and of this he died after an illness of five days. Upon the development of the bronchitis, the muscular semi-paralysis entirely disappeared, so that he was able to be up and dressed every day but the last. His intellect remained perfectly clear till within an hour or two of his death, the last few days of his life being devoted to winding-up all those little worldly matters which of necessity remained to the last.

It is nothing unusual for aged and comparatively robust people, previous to an attack of bronchitis or other inflammatory affection, to suffer from delirium, confusion of thought, or semi-paralysis; children and more delicate persons under such circumstances being, from the greater mobility of their nervous system, more usually affected with convulsions—the occurrence of either of these accidents affording proof of the general

affection of the cerebro-spinal system by the injurious stimulus previous to its becoming localised, as what we call a disease, in the *pars minoris resistentiæ*. But this is only a figure of speech, for disease is not an entity that can distinguish and attack the feeblest part of the organism, nor is it an injurious substance capable of being localised in any one part, thence to be dislodged by nature or the doctor; but rather it is the visible manifestation of those compensating organic changes necessitated by the excessive or defective action of some natural stimulus to vitality, or of some similar stimulus whose injurious action is rendered possible by the actual laws of life, and which—taking temperature as our example—we may conceive as acting in somewhat of the following manner.

Every manifestation of vitality is necessarily connected with molecular change, the used corpuscular elements being removed and replaced by fresh ones. To facilitate and render possible this constant degradation and renovation of tissue, each structure, as it is broken up and replaced, is carried to and from its destination in the form of more or less elementary chemical compounds. For these, as well as for all other chemical processes, a certain amount of external temperature is requisite; but in order to provide for the maintenance of life under the continual variations of the external temperature existing on this globe, Providence has employed various subsidiary measures, partly external and partly internal to the organism. Thus the relative amount of oxygen—the great source

of chemical action, and thus of the development of internal heat—in the air inspired, is in an inverse ratio to the amount of external temperature. Thus, too, each animal is enabled, by diminishing or increasing the amount of food, and especially of the heat-producers in that food, taken within a certain time, to diminish or increase the amount of heat produced. Lastly, the heat produced may either be entirely expended in maintaining the normal mean—that is, in providing for the ordinary bio-chemical requirements of the organism—or it may be partly employed in evaporating the perspired fluids, escaping thus in a latent form from the body, and producing thereby a cooling effect on it. By such means we are enabled to maintain a normal mean, even under a very considerable rise of external temperature—a rise in temperature being always, however, connected with more or less increase of chemical action, and therefore of functional activity of many of the organs ; and thus it may, from the decarbonisation of the blood being also impeded, give rise, especially upon any sudden or strenuous exertion, to sudden death from asphyxia from internal causes, as well as to death from syncope by sudden exhaustion of the nervous system, which are the two usual forms of death from insolation or sun-stroke. Various other more chronic morbid affections, into which it is unnecessary to enter here, also arise from the excessive functional activity of certain organs, and the disturbance of the ordinary bio-chemical relations from an excess of external temperature. Moreover, the diminution in the heat-producing power of

animals who have been long exposed to a high external temperature renders them more sensitive to the effects of cold—that is, of a diminution of temperature ; those organs whose functional activity has been previously most excited being of course—*cæteris paribus*—most liable to suffer from this morbid stimulus. Hence in warm and in temperate climates, or in the latter, in summer and in winter, we have different diseases, as it is termed—similar affections of different organs, arising from a similar fall of temperature ; the *pars minoris resistentiæ* varying as it were with the season, or with the amount of external temperature to which the organism has previously been exposed. Thus in our own climate diarrhoea and other bowel-complaints are summer and autumn diseases, while affections of the chest are most prevalent in winter and spring. Cold, as I have already mentioned (p. 131), acts as a powerful stimulus to vitality, but in excess it depresses it ; and by necessitating increased waste of the tissues in exercise, or the employment of a disproportionate amount of the food in the production of heat, may cause wasting of the body, various secondary affections of different organs, and death from *eremaeausis* or from sudden or more gradual exhaustion of the nervous system.\* But the action of cold is chiefly interesting,

\* Of course, when I speak of exhaustion of the nervous system I do not mean that the organism is deprived of any necessary nervous force supplied by that system, but only that it is somehow—probably by interference with its nutrition—rendered unfit for those purposes of co-ordination without which an organism, as such, cannot exist.

in a medical point of view, from its being the great exciting cause of all those more or less acute inflammatory affections to which the body is liable. By its stimulant action upon the extremities of the sentient nerves in the skin, it produces as I have already shown (p. 159), a constriction of the small arteries, corresponding in degree, and probably in extent—though of that we have no positive evidence—to the relative severity of the sensation. This constriction of the small arteries is accompanied by a greater or less depression of the heart's action, and by more or less congestion of the veins and the capillaries\*—a state of matters which, by interrupting the ordinary bio-chemical or nutritional changes of the tissues, must reduce the part or organ chiefly affected to the condition of one whose cell-elements are so enfeebled as to be dying or already partly dead, and the reaction needful for the repair of which necessitates those abnormal nutritional changes which we term inflammation;† this

\* Handfield Jones, *op. cit.* pp. 28, 29.

† “Take away or suppress by any means the controlling force which holds in organic relations the elements of a living frame, and that anti-vital change takes place, that new arrangement approximating to the inorganic state, which the familiar affinities of those elements always tends to produce. Thus is inflammation, as it were the sword of Damocles, suspended over the head of every living thing, even as death for ever threatens life; for inflammation involves a partial dying of the part affected, and the reaction of the living frame against it” (“Theory of Inflammation,” by James Hinton, M.R.C.S., *Med. Chir. Rev.* vol. xxii. p. 213). Professor Lister's experiments also prove that “the blood flowing through an inflamed part behaves itself in the same way as when separated from the body”—that is, that



morbific effect of cold being always in the direct ratio of the general debility of the organism, and especially of the relative debility of the organ.

If, then, what we term inflammation be necessary "to restore a life that has been lost,"\* it may be argued that to cut short an inflammation would be a fatal policy even if it could be successful, and that the most we ought to attempt is to conduct it to a favourable termination. But I have already shown (p. 135) that all these reactions of the organism are arranged, as to degree and amount, for the best possible good of an independent and unaided organism ; but that by modifying the circumstances much of this reaction may not only be rendered unnecessary, but may also be prevented, and that thus acute diseases may be cut short without danger to the vitality either of the organ or the organism. In regard to acute diseases of internal organs I may explain that much of the injury done seems to result more from the inordinate reaction than from the previous suspension of vitality, so to speak, and that by modifying that reaction much of the repair is rendered unnecessary ; that therefore, by the use of appropriate

"the tissues of the inflamed part are in some degree approximated to the condition of dead matter ; or, in other words, have suffered a diminution of power to discharge the offices peculiar to them as components of the healthy animal frame" (vide *Transactions of Royal Society* for June 18, 1857).

\* So far as it is possible, inflammation restores a life that has been lost ; it adds to vitality, not detracts from it ; loss of vitality is its starting-point, but not its essence (Hinton, *loc. cit.* p. 217).



means, acute disease may not only be readily but safely cut short. I also hold that these means, to be effectual, must have a direct relation to the origination of acute disease, and must be such as are able to modify the state of the circulation through the agency of the nervous system ; and I shall presently show that the most successful modes of treating acute diseases, both in past times and at the present day—whatever may have been the theory with which they have been employed—have all been such as are capable of producing a powerful effect upon the nervous system ; so that practice and theory both tend to prove the truth of the doctrine I have been advocating, that disease is the result of the excessive or defective action of any of the ordinary stimuli to vitality, and is but the visible expression of a more prolonged and intensive series of those compensating organic changes which are daily and hourly taking place within our frames through the co-ordinating agency of the nervous system—an agency which acts in virtue of and by means of the *vis nervosa*—that is, that susceptibility to the action of a stimulus imparted to matter in a state of organisation by its connection with Life the Psyche ; and that this is especially true in regard to that important stimulus to vitality TEMPERATURE.

The next important stimulus to vitality—the AIR we breathe—from the mode of its employment, inhaling comparatively small quantities at a time, and from its almost uniform composition over the globe, can never prove a source of danger from positive excess of action. There is ample proof, however, that when in motion,

particularly as what is popularly termed a draught, it may in any climate produce or largely increase the sensation of cold,\* and thereby the danger to be apprehended from that sensation. In cold climates also, in certain diseased, especially phthisical constitutions, the small increase of oxygen may prove a source of relative danger threatening increased rapidity of eremacausis ;† and it is

\* I have already given an instance of the effect of a breeze in tropical climates in regard to this (p. 127). Mr. Fisher, one of the surgeons to the expedition, found that in “the voyages under Sir E. Parry a breeze in the polar seas was more than equivalent to a fall of more than 50° F.” (*vide* “Animal Heat,” *op. cit.* p. 681).

† That oxygen is detrimental to consumptive patients is shown not only by the beneficial effect produced by reducing the air by the addition of hydrogen, etc., but also by positive facts. Thus one man, disgusted with hydrogen on account of slight dizziness and nausea on its first trial, insisted on his right to have oxygen instead, observing that it was only pernicious in theory. He breathed twice a day for five minutes a mixture of one pint of oxygen and three of atmospheric air. At first he felt relieved, but in two days the cough and fever were much increased. This he attributed to a cold caught ; but a repetition, after an interval, of the same remedy had a similar effect (*vide Considerations on the Medicinal Use of Factitious Airs*, by Thomas Beddoes, M.D., Bristol 1795, p. 43). Another individual, in perfect health, breathed oxygen for seven weeks, sometimes for half and at others for a whole hour each day. His complexion became heightened, his fat decreased, but his muscular system became developed, along with a desire to exercise it, and with the power to withstand cold. At length he was seized with epistaxis, burning hands and feet, a pulse above 100, particularly at night, when he became feverish (hectic?). Perfect quiet, and a diet in which butter, cream, and oil predominated, sufficed to restore him to health (*vide Letter to Dr. Darwin on a New Method of Treating Consumption*,

partly for this reason that such individuals obtain more or less relief by residence in a warm climate. In warm climates, on the other hand, many chronic and some acute ailments may be aggravated or produced by an oxygenation of the blood relatively defective to the amount of food consumed. It is hardly necessary to state that positive deprivation of air is necessarily fatal, and cannot be endured above a few seconds.\* Relative deprivation of air may be produced by the expansion produced by increased temperature, or by the admixture of various gases, which may to a small extent usurp the place of the oxygen, but which produce more ill by neutralising its action, or acting themselves as poisons, and thus producing many chronic complaints, particularly scrofula, and largely increasing the mortality of densely-populated towns as compared with

etc., by Dr. Beddoes, Bristol 1793). Considering the important nature of this stimulus to vitality, and the ease with which it can be modified, it seems to me that too little attention has been hitherto paid to the treatment of disease by factitious airs. The mere mechanical pressure of the atmosphere is unquestionably its least important property; yet even it has been productive of great good in many cases in the form of the compressed-air bath.

\* Dr. Lefevre of Rohefort found that none of the sponge-divers of Navarino could remain under water for two whole minutes; and Mr. Marshall found that the best pearl-divers of Ceylon could rarely sustain a submersion of more than fifty seconds. Asphyxia thus supervenes in from a few seconds up to a minute and a half, but *l'aptitude à vivre*—the power of resuscitation—continues in some cases for some short time longer. Animals whose blood is highly oxygenated withstand longer the privation of air by submersion in water or in irrespirable gases (*vide* Beddoes, *op. cit.*)

the open country,\* depressing the vitality, and thus favouring the propagation and augmenting the mortality of many diseases which of itself it does not produce. Moreover, the air, whether pure or impure, acts as the vehicle for the conveyance, not only of malaria, but of most of the various specific contagions which affect the human frame; and thus acts not only as a stimulus itself, but also as a vehicle for other stimuli whose action is not always readily separable from that of the air itself; so that we are forced to refer to the influence of the air morbid agencies which are often of telluric origin, and the absorption and diffusion of which through the air tends in the first place to distribute them, but tends also and chiefly to weaken and extinguish their morbid powers.

In consequence of the continual destruction of tissue in every act of life, and the necessity for its replacement, the ALIMENT of the body, including both food and drink, is one of the most important stimuli to vitality. At the same time, from the fact that there are always some superfluous stores of carbonaceous matter, in the form of fat, etc., within the system, mere life may be maintained for some little time even under the circumstances of a total deprivation of food,† though

\* According to the *Third Annual Report of the Registrar-General*, the mean duration of life in the town is only thirty-eight years, while in the country it is fifty-five. But there are various other causes at work in the production of this mortality besides the mere impurity of the air, which is in fact probably one of the least efficacious of these causes.

† According to Casper, for not less than twelve days (*vide*

unquestionably any exertion would much diminish this period.\* For the same reason, it is only by a gradual wasting of the tissues, and where other causes are combined by the production of various chronic diseases, that the morbid agency of defective alimentation makes itself felt. Moreover, such is the complex system of our frame that this defective alimentation may arise not only from the deficient ingestion of aliment, but also from its imperfect digestion or assimilation. The ill effects of defective nutrition may thus originate at any stage of what may be comprehensively termed the process of alimentation ; and not only so, but may be the ultimate effect of any excess in the quantity or quality of the food, as well as of any defect—the latter being, within certain limits, the less injurious of the two ; so that there is considerable truth in the only advice said to have been given by Sir Richard Jebb to healthy persons on the subject of their diet—not to eat the fender or the fire-irons, for they were decidedly unwholesome, but with respect to all ordinary dishes to do as they pleased in moderation.

The sensation of hunger, like the *besoin de respirer*, originates in the perception of the wants of the system by the encephalic portion of the nervous system,† and is his *Forensic Medicine*, New Sydenham Society's translation, vol. ii. p. 29).

\* That muscular and mental activity necessitate a greater demand for food than a mere subsistence diet, *vide* Playfair *On the Food of Man in Relation to his Useful Work*, Edin. 1865.

† *Cyclopaedia of Anatomy and Physiology*, vol. iii. p. 899.

wholly unconnected with any particular physical condition of the stomach itself. The ingestion of aliment produces an immediate revivification of the whole frame long before any portion of it can be assimilated and applied to the restoration of the tissues ; this revivification therefore must be of nervous origin, and consists in a measure of a lively sense of benefits to come. But though some of the immediate effects of injurious alimentation—as vomiting or diarrhœa—are reflex acts ; and though others result in the direct poisoning of the nervous system, as from the ingestion of narcotic substances, etc. ; by far the most frequent and most important result of injurious alimentation consists in the deprivation of the tissues of the body, by which they or the organism itself is enfeebled and rendered less able to resist the noxious influences of other stimuli—such as cold, etc.—or by which they are rendered more or less unfit for the maintenance of vitality, and thus become disturbing elements in the natural and healthy co-ordination of the system and sources of reflex irritation to various other parts of the organism. Thus—

“ Gross riot treasures up a wealthy fund  
Of plagues ; but more immedicable ills  
Attend the lean extreme.”

The fact that all the phenomena of vitality are the result of certain stimuli acting upon certain susceptibilities, within certain limits of variation, and that diseases are the result of the same or similar stimuli acting in excess or defect of these limits, teaches us this



lesson, that the more carefully we seek to avoid all occasions of disease the more certainly do we expose ourselves to them.

If we shun all exposure to cold, and seek to maintain around us one uniform temperature, we thereby reduce the natural heat-producing power of our system, and render it more liable to be injured by any accidental exposure. If by a careful system of diet we seek to preserve our health, "the more rigid has been the observance of regimen, the more pernicious will be the slightest aberration from it: one act of intemperance, or one deviation from a settled plan, shall do more mischief to the man of rule than repeated irregularities to the habitual rake; since, in the latter case, what they gain in frequency they lose in force." A cold bath for once may give additional vigour both of body and mind; but its constant repetition invigorates less than its disuse debilitates. A few glasses of wine to one unused to them are vastly refreshing; "but he who would perpetuate their grateful influence from day to day *may* descend into habits of drunkenness, but cannot rise into preternatural health, since it is only by exceeding custom that the body can be for a time excited, and it soon again finds its level, if it do not sink below it. We may accumulate artificial wants, but we cannot make ourselves what nature has not made us; and it is written, Man is not to be exempt from maladies, or to last for ever."\* Indeed, as I have already shown, he cannot live in his present state without, from the very tenure

\* Fletcher's *Physiology*, Edinburgh 1836, p. 131, note.



of his life, being exposed to maladies, while life under present circumstances inevitably involves death sooner or later.

A careful consideration of all these facts enables us beneficially to influence the system by regulating and varying the qualities and quantities of the ordinary stimuli to vitality—temperature, air, and aliment—without having recourse to those coarse and vulgar remedies which are ordinarily understood to be the peculiar weapons of the physician, but which, though indubitably occasionally both necessary and useful, are ordinarily far less so than is generally believed by at least a certain portion of the public. While in all our endeavours to benefit the microcosm—the body—we must never forget Pope's beautiful description of the macrocosm, and reading cell to cell and organ to organ in the last line, remember that

“ God, in the nature of each being, formed  
Its proper bliss, and set its proper bounds ;  
But as He framed a whole the whole to bless,  
On *mutual* wants built *mutual* happiness ;  
So from the first eternal order ran,  
And creature linked to creature, man to man.”

*Essay on Man.*

## CHAPTER FIFTH.

## OF INFLAMMATION.

*“Obsta principiis, sero medicina paratur,  
Cum mala per longas invaluere moras.”*

I do not at present intend entering at large upon the treatment of inflammations ; all I wish to show is, that of all the chief methods of treating inflammation which have prevailed in time past there is not one which could have had any beneficial influence upon the disease except by acting upon the vitality of the system through the agency of the nervous system, whatever may have been the theory with which they were employed.

*Of Bloodletting.*—Bloodletting, which has been for many centuries a favourite form of active treatment in inflammation, may be either local or general.

When we can abstract blood locally directly from the inflamed part, very considerable and often permanent relief is frequently obtained. It is of course obvious that the source of this relief cannot be ascribed to any diminution in the quantity or alteration in the quality of the mass of blood circulating in the system ; because in many cases, where the most marked relief has been

obtained, the quantity of blood abstracted has been too small to have been of any avail in producing such effects. It is equally obvious, therefore, that the mere abstraction of one portion of blood, to be immediately replaced by another portion of precisely similar blood, could not possibly have any effect in checking an inflammation except by influencing the vitality of the part. From the researches of Professor Bernard we learn that the circulation in each organ and part is completely under the regulating influence of the nervous system, which is capable of modifying the local circulation of a part without inducing any disturbance of the system generally, or of the neighbouring organs.\* From the researches of Lister and others we learn that inflammation commences with constriction of the smaller arteries, with more or less congestion of the veins and capillaries, this stasis of the blood inducing a debility of the tissues affected more or less akin to molecular death, the subsequent reaction being intended to remedy this by renovating the tissues. It is obvious therefore that if by local appliances we can directly remove this local congestion, we not only induce a species of artificial local circulation which may be attended with the best results in maintaining the integrity and vital relations of the molecules; but by thus substituting a more or less normal condition of these vital relations for one of gradual failure, we also do away with the cause of that vital reaction which, under ordinary circumstances, succeeds to the primary effect

\* *Journal de Physiologic*, vol. i. p. 658, etc.

of the irritant, and thus check the inflammatory process *in limine*, through the agency of the ordinary vital co-ordination of the nervous system. It is evident that this mode of treatment, to prove successful, must be efficiently carried out, and must be commenced at a very early period of the disease ; hence the importance of attending to the well-known dogma *principiis obsta*.

The action of local bloodletting can only be to modify the local circulation : inasmuch as inflammation consists not in mere hyperæmia, but in an altered relation between the blood and the tissues, local bloodletting can only influence the progress of inflammation, not by the mere abstraction of blood, but by the restoration of the normal vital relations. I can conceive of no other mode in which these vital relations can be restored save by a process of nutrition. I therefore hold that the modification of the circulation induced by local bloodletting favours the maintenance of the normal nutrition and vital relations of the tissues concerned ; and any abnormal excitement or nutrition being thus rendered unnecessary, the influence of the primary stimulus is allowed to die out under the gradual reassertion, through the nervous system, of the normal vital relations of the tissues.\*

\* The experiments of Haller lend some support to this theory. He observed that when a vein was opened the blood flowed more rapidly in it than in any vein unopened, or even than in the arteries ; that this increased rapidity of circulation extended over all the neighbouring vessels, both veins and capillaries, and to some extent the arteries also ; and thus that

The researches of Professor Struthers\* have shown that local bloodletting from the walls of cavities has no influence on the organs contained within them, because of the absence of any vascular connection between the two. The benefit, therefore, which has been supposed to flow from such treatment in any case must be ascribed to its effects upon the general system, or to the imagination of the physician, of the patient, or of both.

From the local causes just mentioned,† and from its retarding effect upon the circulation when it is supposed to act most beneficially, general bloodletting cannot be supposed to act in the manner just attributed to local bloodletting, but must act in one of three ways—1st, By diminishing the general amount of the cir-

the amount of blood was inverted and flowed from the heart in the veins more freely than from their extremities. This latter remark shows at how great a comparative expense to the constitution relief is obtained in this manner. Moreover, he observed this movement to extend to blood already stagnating, and caused globules to become distinct which had previously combined into irregular masses. “Les masses de globules réunis sont remises en mouvement par la saignée ; et les grumeaux, qui en sort quelquefois par l’ouverture sous la forme du nuées rouges, contribuent à rétablir la liberté de la circulation,” etc. (p. 103 ; *vide* also pp. 100 and 101, in *Deux memoires sur le mouvement du Sang, et sur les effets de la Saignée*, Lausanne 1756).

\* *Monthly Medical Journal*, April 1853, p. 315 ; and *Anatomical and Physiological Observations*, by John Struthers, F.R.C.S., Edinburgh 1854.

† And also from the tremendous or even fatal expenditure of the vital fluid which would be necessary to produce such a local effect by general means, *vide* note p. 185, and Haller, *op. cit.* p. 100.

culating fluid ; 2*d*, By diminishing the amount of certain morbid elements in that fluid ; 3*d*, By producing some general effect upon the nervous system ; or by a combination of all three.

It is long since M. Andral pointed out that plethora, or an excess of blood, does not predispose to inflammation.\* On the other hand, various well-known clinical facts seem to show that a state of excessive depletion tends to produce, or at least to favour, the occurrence of inflammation. In regard to a case of this character Dr. Graves remarks : "This poor man had been five times bled for a fit of apoplexy, and had been debilitated by various other depletory measures, and in three days afterwards, while lying exhausted and drained of blood, inflammation commences in the pleura, and goes on to a fatal termination unchecked by remedies."† These facts, coupled with what we know of the pathology of inflammation, seem to me to prove that the mere diminution of the quantity of the blood in the organism is of no avail in checking an inflammation. It cannot prevent—nay, seems rather to favour—the occurrence of an inflammation, and, *à fortiori*, it cannot cut short an inflammation already begun, however much it may, by

\* *Essai d'Hématologie Pathologique*, Paris 1843, p. 43.

† *Clinical Lectures*, p. 836. "There are none," says Dr Alison, "who resist the exciting causes of inflammation so well as those in whom the blood is abundant, and the vascular system vigorous. But the tendency to inflammation is remarkably given by all permanent causes of debility, by imperfect nourishment, impure air, long-continued heat or cold, excessive evacuation, and intemperance."

a general diminution of the vitality, mask the more important symptoms ; indeed there is every reason to conclude—and this is supported by the experiments of Haller, as well as by many clinical facts which it is unnecessary to quote here—that the body would be drained of blood before any local inflammatory process would cease from a mere diminution of its quantity. A diminution of the quantity of blood, however, when produced in a certain manner, induces certain powerful effects upon the system which shall be referred to presently, when I come to treat of the effect produced upon the nervous system by bloodletting.

In regard to the diminution of any *morbific principles* in the blood by bloodletting, there is only one component of the blood which has almost from time immemorial been regarded as present in an anormal amount in inflammatory blood, and the diminution of which has been studiously sought to be attained by bloodletting, with what success we shall presently see.

Humoral pathologists, finding that in most inflammatory diseases, and particularly in inflammations of the thoracic organs, there was a constant excess of fibrine above the amount normally contained in the blood, framed to themselves a theory wherein they regarded this hyperinosis, or fibrinous dyscrasia, as the starting-point of the disease, which they supposed could only be cured by the artificial removal of this excess of fibrine by bloodletting or other means. In the fol-



following table is exhibited the result in this respect of venesection in pneumonia :—

*Amount of Fibrine in the Blood in Pneumonia.\**

		1st Venesection.	2d Venesection.	3d Venesection.	4th Venesection.
Andral and Gavasset, Case	1	4.0	5.5	6.5	9
	2	5.2	7.3	6.9	7.5
	3	8.0	8.0	8.5	8.4
	4	5.6	6.5	9.1	9.4
	5	5.8	8.2	8.8	8.4
	6	8.0	8.4	8.6	9.0
	8	5.5	6.8	6.4	
	9	7.0	6.5		
	10	6.5	9.1	9.4	
	12	8.9	10.2	10.0	5.1
	13	7.2	9.0	10.5	
	14	7.4	7.5		
	15	6.2	7.0		
	16	7.1	8.2	9.0	10.0
	18	6.7	8.9		
	20	6.0	7.5	8.8	
	21	4.3	4.8		
Popp . . . . .	38	7.0	7.5		
	42	10.1	10.8		
	43	6.2	7.9		
	50	3.0	7.2	7.9	9.0
Scherer . . . . .		9.7	9.4	12.7	8.8
Rindskopf . . . . . Case	3	5.9	7.7	10.3	5.8
	4	7.8	9.0	9.4	
	5	6.7	7.7		

From this table it will be seen that so far from producing a diminution of the fibrine, each venesection reveals a positive increase in its amount, which, if not

\* Extracted from Henlé's *Rationelle Pathologie*, vol. ii. part i. p. 99. In regard to it, it must be noted that from the simultaneous diminution of the corpuscles, the increase of the fibrine appears actually less than if it were calculated in regard to the plasma alone.

caused is at least wholly unaffected by it. The fact, that after each repetition of the venesection the amount of fibrine in the blood is increased, awakens the suspicion that to a certain extent at least the one is the cause of the other, and this is confirmed by a reference to physiology. For Remak, experimenting upon large blood-lettings (40lbs. and upwards) in healthy horses, always found the blood last drawn, or that taken next day, to contain a perceptibly greater quantity of fibrine, while the apparent buffy coat was, from the relative greater diminution of the red corpuseles, very largely increased (from one-eighth to one-quarter of the whole mass).<sup>\*</sup> Even in regard to the dog, whose blood in the normal state displays no buffy coat (differing in this from the horse),<sup>†</sup> Dr. Marehand found in the large quantity of blood first detracted 4.96 parts of fibrine in 1000, in a second smaller quantity removed next day 5.12, and in a third one, the day after, 5.42.<sup>‡</sup> It may be regarded, therefore, as proved that though inflammation may increase the amount of fibrine in the blood, yet that bloodletting is powerless to decrease it, but on the contrary always increases it both in a state of health and when inflammation is present, unless when pushed to a very dangerous degree. M. Andral has stated that “si l'on soustrait du sang tout-à-fait au début de la phlegmasie, alors que dans le solide il n'y a guère encore qu'une congestion, et que dans le sang la fibrine est

<sup>\*</sup> *Diagnostische und Pathogenetische Untersuchungen*, by Dr. R. Remak, Berlin 1845, pp. 121, 122.

<sup>†</sup> Andral's *Hématologie*, p. 27. <sup>‡</sup> Remak, *op. cit.* p. 125.

encore à peine au-dessus de son chiffre normal, on pourra par des saignées empêcher la maladie d'avancer, et la faire, dans certains cas du moins, véritablement avorter."\* In another portion of his work, M. Andral has stated : "J'ai en plusieurs fois l'occasion de faire pratiquer deux saignées à un même individu, la première la veille du jour où une phlegmasie débutait chez lui, et la seconde très peu d'heures après l'invasion, très nettement marquée, de cette phlegmasie : eh bien ! dans le premier sang tiré, je trouvais la fibrine en quantité normale ; dans la seconde elle était en excès."† So that bloodletting, even when timeously performed—previous to any increase of the fibrine in the blood‡—is not always able to cut short a phlegmasia ; and this fact, coupled with that expressed in the table quoted, which shows that when pneumonia is already developed bloodletting is inadequate to produce any diminution of the fibrine in the blood, and with those further physiological facts which show that the fibrine in the blood actually increases, even in a state of health, *pari passu* with the numbers of the bloodlettings, proves that when bloodletting does cut short a phlegmasia it is not because it removes from the blood that element which has been regarded as the special morbid element in inflammation—fibrine, but because of some

\* Andral, *op. cit.* p. 123.

† *Ibid.* p. 97.

‡ The results of bloodletting upon the various components of the blood will be found very carefully elucidated in Giovanni Polli's work, *Degli effetti della sottrazione di sangue nell' umano organism* ; and the sources of the fibrine will be found fully detailed in Virchow's *Cellular-pathologie*, Berlin 1859, p. 142, etc.

other powerful influence which it has upon the organism.

There is no more certain cause of death than hæmorrhage, and it proves fatal in two modes : first, “ when the hæmorrhage is very gradual, all the indications of failure of the circulation may come on—the feebleness of muscular action, the paleness and collapse of the countenance, the coldness beginning at the extremities, the cold sweat beginning on the face ; and the pulse may become imperceptible without the senses or the intellect being impaired ; and a slightly laborious or heaving respiration may be almost the only indication of injury of the nervous system up to the moment of death.”\* Life ceases to be manifested because there is no means of replacing the molecules wasted in its manifestation ; the organism perishes from exhaustion, the nervous system giving way first because it is most sensitive to defective nutrition.

But “ a most sudden and violent hæmorrhage affects the nervous system much more speedily, just as we have already seen that any other means of suddenly diminishing the pressure to which the brain had been subjected does ; and the impression thus made in the brain *reacts on the heart after the manner of a concussion*, and causes its action to fail much sooner than it would have done merely by reason of the loss of blood. It is only in this way that we can explain the fact that in bleeding from a large orifice, and in the erect posture, not only sensation and the other functions of the

\* Alison's *Pathology*, p. 26.

brain are sooner suspended, but the *heart's own actions fail*, with much less loss of blood than when the orifice is smaller, and the patient lies horizontally, so that the diminution of the pressure on the brain is less and more gradual.

In this manner death may be produced, certainly in much less time and probably with less loss of blood, than by a more gradual hæmorrhage ; and in such a case the greater affection of the nervous system is shown, sometimes by transient delirium, often by nausea and vomiting, and very generally by insensibility, and by more or less of spasms or convulsions, often repeatedly occurring before death."\* That it is this affection of the nervous system which is regarded by the best authorities as the great curative agent, and not any mere diminution of the mass of blood, or removal from it of any morbid element, is shown by the whole tenor of Marshall Hall's work on bloodletting, and especially by the following remarkable paragraph : "I would still add one further remark. It is, that the effect of bloodletting may in some cases be beneficially renewed, without the further abstraction of blood, by mere change of posture. If the perfectly erect posture be resumed syncope will frequently recur, and this state may in some cases be advantageously prolonged."† We can easily understand that this sudden and violent action upon the nervous centres which reacts so forcibly upon the

\* Alison's *Pathology*, p. 26.

† *Researches on the Effects of Loss of Blood*, London 1830, p. 300.

central organ of the circulation, must also affect with equal intensity every part of the organism, and we can readily suppose one of its effects to be relaxation of that spasm of the small arteries which Cullen supposed, and which Lister has proved to be, the initial phenomenon of inflammation. We may therefore readily grant that bloodletting, as it is one of the most ready and powerful means of affecting organism through the nervous system, so it may also be in the same manner one of the most effectual means of cutting short an inflammation. But we can never forget that, even according to the best authorities, this is one of its rarest effects. Alison has stated : "It is in a few cases only that bloodletting can be said (even on a general view of the symptoms) to *cut short* inflammation ; the more usual effect to be hoped for is more correctly expressed by saying that it *disposes it to a favourable termination*."\* Chomel says that pneumonia has a period of increase which lasts several days, during which bleeding is only followed by a short and little marked amelioration, which may be entirely wanting.† Andral states : "Quant à l'inflammation du parenchyme, les saignées purent la modérer et contribuer efficacement à son heureuse terminaison ; mais elles ne l'enlevèrent pas. . . . Je ne crois pas que la saignée puisse ainsi faire cesser brusquement les inflammations parenchymateuse, et, en particulier, celles du poulmon."‡ And M. Louis, in his important work *Recherches sur les*

\* *Pathology*, p. 224. † *Dict. de Med.* t. xvii. p. 242.

‡ *Clin. Medicale*, Bruxelles, t. i. p. 205.

*effets de la Saignée*, has said : "Il resulte des faits exposés dans ce chapitre, que la saignée n'a eu que peu d'influence sur la marche de la pneumonie, de l'érysipèle de la face, et de l'angine gutturale, chez les malades soumis à mon observation ; que son influence n'a pas été plus marquée dans les cas où elle a été copieuse et répétée, que dans ceux où elle a été unique et peu abondante ; qu'on ne jugule pas les inflammations, comme se plaît trop souvent à le dire ; que, dans les cas où il paraît en être autrement, c'est, sans doute, ou parce qu'il y a eu erreur de diagnostic, ou parce que l'émission sanguine a eu lieu à une époque avancée de la maladie, quand celle-ci était voisine de son déclin."\*

It would be easy to multiply these statements, but enough has been given to show how very rarely inflammations can be cut short by bloodletting, no doubt because they but seldom come under observation at a period sufficiently early to enable us to do so ; and these statements are in accordance with the teachings of pathology, for if inflammation be a renewal of life, a renovation of the tissues by a process of nutrition, which, though not ordinary, it is yet wrong to call

\* *Op. cit.* Paris 1835, p. 31. In his *Hématologie* Andral arrives at a similar conclusion from a different point of view. He says : " Il resulte donc qu'une fois que le sang s'est mis à produire un excès de fibrine, il faille un certain temps, quoi qu'on faire, pour que cette disposition, épuise ;" and again, " Dans le solide, les saignées les plus copieuses ne font pas que les alterations dont il est atteint disparaissent sur le champ ; un certain laps de temps est toujours nécessaire pour que cette disparition s'accomplisse et pour que la fièvre s'éteigne" (*op. cit.* pp. 122, 123).



anormal, our only hope and desire ought to be, not to check the process, but only to moderate the reaction involved in it. To check the process of renovation, after the necessity for it had occurred, would be seriously to mutilate, if not fatally to injure the organism ; we may be thankful therefore that the natural organic relations place this beyond our power, but that while blood enough remains in the body to maintain the vital functions, a portion of it will always be expended in completing the necessary repairs. In this consists the safety of bloodletting, while its dangers arise from the fact that its immediate action is depressing to the vitality of the system, that this depressing effect is, where the powers of the system are adequate to recovery, of necessity attended by a more or less violent reaction, the uneasy symptoms of which are most rapidly and easily—but by no means safely—removed by a recurrence to the lancet.

There is little danger indeed that any educated physician should deliberately kill a man by way of curing an inflammation, but ample evidence exists to prove that this has unintentionally occurred—not once or twice, but many and many a time. In proof of this I need only refer to the numerous cases contained in Marshall Hall's work on bloodletting, though many more might easily be pointed out ; and this sad error was committed, not by careless neophytes, but even by men whose names are guarantees alike for their skill and for their considerate thoughtfulness.\* And all

\* As one instance allow me to give the following quotation :

this risk was run, not, as we have seen, with any certainty of cutting short the disease, but only in the hope of "disposing it to a favourable termination." Nevertheless, I hold that this risk was rightly run by those whose pathology taught them that when pneumonia proved fatal at an early period of the disease, it did so from "effusion of blood into the cellular tissues of the lungs,"\* while if untreated, or treated with indecision—that is, without bleeding: in the language of our forefathers, these terms are synonymous—it ended in suppuration, which "was very generally fatal and always very uncertain;"† and I agree with Dr. Gregory in thinking that, from his own point of view, Dr. Radcliffe was "no fool," when at the age of sixty he submitted to the loss of one hundred ounces (upwards of six pounds) of blood, not because he thought the remedy safe, but because he considered it less dangerous than the disease. But the case is far otherwise now; the light of a less uncertain pathology has taught us that "Mr. Lloyd ordered the patient to lose eighteen ounces of blood, considering, as we suppose, the state of the pulse as indicative of inflammation, and not as resulting from loss of blood—hæmorrhagic irritation, as this state has been called. The dresser, however, perceiving what effect even the loss of a few ounces had, desisted from drawing any more. About two hours subsequently Mr. Lawrence saw the patient, and concurred with Mr. Lloyd as to the propriety of the further abstraction of blood; they therefore directed twenty ounces of blood more to be drawn. The pulse after this time became a mere flutter, and the man only survived a few hours."—*Op. cit.* p. 26.

\* Cullen's "Clinical Lectures," vide *Edin. Med. Jour.* September 1865, p. 220.

† Gregory's "Clinical Lectures," *loc. cit.* p. 216.

neither effusion nor suppuration are necessarily fatal terminations of pneumonia, that these terminations are not always preventible by timely and efficient blood-letting, and also that bloodletting is neither the sole nor the best, and far from being the safest means of preventing these terminations of inflammation ; and reserving the right of every conscientious practitioner to employ this indubitably powerful remedy for proper and justifiable reasons. I would say that he would be a bold man who would nowadays propose to relegate us to the mischievous uncertainties of our forefathers for any such fanciful reason as a supposed recurrence of an imaginary type of inflammation whose original existence is wholly incapable of proof.\*

\* Since writing the above I have had the pleasure of perusing Dr Stokes' admirable address in medicine delivered to the British Medical Association this year (1865). I need scarcely say that I do not sympathise with his arguments in favour of there being such a thing as a change of type in disease. I have already anticipated most of his arguments : the only novelty is his statement that, as distinctive from the appearances found during 1820-30, in pneumonia during the last twenty-six years "the redness, firmness, compactness, and defined boundary of the solidified lung was seldom seen ; and that state of dryness and vivid scarlet injection to which I venture to give the name of the first stage of pneumonia, became very rare. In place of these characters, we had a condition more approaching to splenisation—the affected parts purple, not bright red ; friable, not firm ; moist, not dry ; and the whole looking more like the result of diffuse than of energetic and concentrated inflammation ; or we had another form, to which Dr. Corrigan has given the name of blue pneumonia, in which the structure resembled that of a carnified lung which had been steeped in venous blood." He also adds that in the serous membranes the same

As a further proof of the chief curative action of bloodletting being upon and through the nervous system, I may instance its action in the cure of intermit-

story is repeated. "The high arterial injection, the dryness of the surface, the free production, close adhesion, and firm structure of the false membranes in acute affections of the arachnoid, pericardium, pleura, and peritoncum, with which we were so familiar before the time in question, ceased in a great measure to make their appearance. \* \* \* Scrous or sero-fibrinous effusions, tinged with colouring matter, replaced the old results of sthenic inflammations, and all tallied exactly with the change in the vital character of the disease." I am at a loss to know what was the change in the vital character of the disease; for, so far as I know, and as medical history teaches, as I have already shown, inflammation has not evinced any change in its vital characters, and continued to be satisfactorily—as was thought—treated by bleeding, till it was experimentally shown that it could be more satisfactorily treated without it. Moreover, Dr. Stokes has not supplied us with any means of differentially diagnosing during life any variation in the sthenic character of pneumonia, and without that all pathological distinctions are of no avail therapeutically. A pulse, not only "remarkably soft," but also "small," was characteristic of the pneumonia of Gregory's days (Clin. Lect., vide *Ed. Med. Jour.* Sept. 1865, p. 221). Dr. Alison declares that no indication as to bleeding could be drawn from the intensity of the local symptoms, as ascertained by auscultation, or from the state of the sputa (*vide* p. 56). Dr. Graves also states that the intensity of the fever, as indicated by the heat of skin, the acceleration of the pulse, etc., is an equally fallacious indication of the necessity for bloodletting (*vide* p. 56). Mauthner and Marshall Hall, from opposite points of view, deprecate any attention being paid to the state of the buffy coat; the one because he regards its absence no contra-indication of bleeding; the other because he regards its presence no certain sign of the necessity for venesection (*vide* p. 56), and their views are corroborated and strengthened by the physio-

tents when employed during the cold stage, as recommended by the late Dr. Mackintosh; a mode of treatment which, I have been assured by those who have

logical experiments of Remak, etc. (*vide* p. 190). We have therefore no evident symptoms ascertainable during life, from which we can deduce any certain indication as to the type or capacity of the disease for bearing bloodletting, which must be employed—if employed at all—solely for general pathological reasons, apart from all fanciful speculations as to type. Further, Dr. Stokes has given no proof for his statements, has referred to no recorded facts which may be compared and reasoned about, but has given us as his sole contribution to this controversy a simple *ipse dixit*, which he could not—as a reasonable man—for one instant expect to be received as in any measure decisive, all the less so that it gives as evidence of a change of type a hypothetical pathological condition which has not once been alluded to by any other writer on either side of the controversy; and yet which, if so well marked as he describes it, could scarcely fail to have been observed and noticed by some, at least, of the many accurate observers who have preceded him. Moreover, the fact—if it be one—that few now die in the first stage of the disease, is probably more justly attributable to superiority of treatment than to the less fatal character of the disease; while the other pathological appearances, if correctly described, are much more probably due to some alteration in the condition of the vascular system than to a change in the essence of the disease, and, indeed, in the different treatment of the two classes of patients, we have a very efficient cause of such alteration. The differences in the pathological appearances of those who have been freely and fully bled before death, and those who have died from the same disease unbled, and consequently full of sap, have not hitherto been made the subject of comparison in the human subject. From what I know of the matter in regard to cattle, I am inclined to believe that Dr Stokes' observations may have some foundation in fact, though his interpretation of them is unquestionably at variance with the whole tenor of medical history.

had large experience in warm climates, is often efficacious when quinine has failed, and which seems to have fallen into disuse, partly from the difficulty of performing the operation in a man violently trembling from head to foot, and partly from the dangers inseparable from bloodletting in all circumstances, and which it is specially desirable to avoid in those whose constitutions are debilitated. But intermittent fever is essentially an affection of the nervous system; it passes often into epilepsy, which is a purely nervous affection; and Knapp (*New York Journal of Med.* Sept. p. 199) relates a case of fracture of the spine in which the parts paralysed remained in their normal state, while all the rest of the body presented the phenomena of ague.\* This curative action of bloodletting in so purely a neurotic disease as intermittent fever is therefore singularly interesting; all the more so that it connects its curative agency with that of remedies which are usually regarded as more purely neurotic in character, and especially with one which, though generally reckoned a tonic, is, from its actions, obviously a neurotic agent of very great value—quinine.

Slight attacks of intermittent fever, like slight inflammatory attacks—eryza, catarrh, etc.—are readily curable by stimulants or a full dose of opium, a neurotic agent of great value which has long been used as an important adjuvant in the treatment of inflammations, and by which alone many serious cases, particularly of abdominal inflammations, may be safely

\* Brown-Sequard *On Epilepsy*, Boston 1857, p. 82.



treated. I have been informed that the intermittent fevers of the fenny districts of England have lately been most successfully treated by a combination of belladonna with quinine, and in the severer forms of intermittent fevers in India a combination of opium with quinine has proved most successful. In April 1852 a circular was sent from the Army Medical Department, based upon the statements of Staff-Surgeon Dr. Kehoe, that the remittents of the west coast of Africa were found to be more manageable than hitherto when treated by a combination of disulphate of quinine and opium, and recommending this method to the attention of army surgeons in the East.

Darjeeling is a sanitary station where fever from local causes is unknown, and whither of course are sent such cases as prove incurable in the plains. It affords, therefore, many admirable opportunities of testing the value of a treatment such as that suggested; and I have before me a letter from Dr. Drysdale,\* who had charge of that station for some time, in which he states, "At your suggestion I first used small doses of quinine and opium in the treatment of intermittent fever, in the proportion of five grains of quinine to one of opium, and after a little experience of its efficacy I never used any other plan. At Darjeeling I saw several very severe

\* Written in reply to his former superintending surgeon, John Balfour, Esq., I. G. (retl.), who, from his own favourable experience of the treatment in question, suggested it to Dr. Drysdale, whom he found indenting for enormous quantities of quinine. In this combination one grain of opium is reckoned equal to at least twenty grains of quinine.



cases of intermittent fever, and a few obstinate ones of remittent ; all of these cases where the disease had been contracted in the plains. . . . When a man presented himself as being the subject of ague, I found out at what hour the attack came on, and the day the next would be expected (the majority of the cases were of the tertian character). Then one hour before it should come on, and on the right day, a powder as above was given. If the man should nevertheless have another attack, on the day when he should next have it the quinine and opium was given an hour and a half before the expected time, then two grains of quinine at the hour before, and two grains more half an hour before the expected time. I never required to use the above treatment more than twice. I then directed the patients to have on the day the attack should take place two grains and a half of quinine and half a grain of opium one hour before the expected time, probably for a week or so, and on the day of interval simply a dose of quinine.

“ Occasional relapses occurred (from some direct extraneous cause), but I never remember such a case in which one dose of the quinine and opium was not sufficient.” This distinct statement clearly proves the value of this mode of treating intermittent fevers ; but it is of still greater importance in relation to the present subject.

Messrs. L  groux, Monneret, Andral, and Trousseau have proved the utility of quinine in acute rheumatism and diseases of a similar type. M. Beau found quinine

of very great service in puerperal peritoneal inflammations, which his official connection with the Cochin Hospital gave him the opportunity of treating in immense numbers. But he further proceeded to test it in idiopathic peritonitis, in which he now regards it as his sheet-anchor, putting no faith either in venesection\* or calomel. As a sample I may quote the following case:—A girl, aged twenty-four, was admitted into La Charité Hospital. “Over the lower part of the abdomen there were great pain and tenderness, which was increased on the slightest pressure; the pulse was small, hard, and quick, averaging about 120 beats in the minute; the skin was hot, dry, and harsh; tongue furred; constant nausea, with occasional vomiting; constipation; the features were pinched, and the countenance indicated much anxiety; respiration hurried; complexion muddy, and the conjunctivæ slightly yellow. The patient lay on her back, with the legs flexed on the thighs. Her previous history showed that she had been in an indifferent state of health for some weeks prior to the invasion of the disease, which she attributed to an unusual amount of bodily fatigue to which she had been subjected. From these symptoms M. Beau at once diagnosed the existence of acute peritonitis. Treatment: an emetic composed of ipecacuanha and tartrate of antimony was ordered, to be fol-

\* M. Beau regards inflammation as caused by excess of fibrine, inflammatory blood as poor in globules and containing much fibrine, and he proscribes venesection because it diminishes the globules and increases the fibrine.

lowed by a purgative enema. The feeling of nausea having thus been removed, and the stomach prepared for the administration of the sulphate of quinine, this medicine was prescribed as follows:—Two grammes (equal to thirty grains) were ordered to be divided into three doses, one of which was to be given every eighth hour, and a blister was to be applied to the lower part of the abdomen over the spot where the pain and tenderness were greatest. After four or five doses of the quinine, its physiological effects—such as deafness, ringing in the ears, etc.—began to manifest themselves, and contemporaneous with this there was a manifest diminution of the original symptoms. The pulse from 120 was reduced to 110; the pain and tenderness of the abdomen were considerably subdued; the febrile symptoms generally were greatly modified, and the countenance was more placid. The quinine was ordered to be continued, together with the use of refreshing drinks, and on the fourth day of the treatment the pulse fell to 100, accompanied by a corresponding improvement in all other respects.

“In a week or ten days from the commencement of the treatment the full effects of the quinine having been produced—that is to say, the original disease having been as it were overcome—the medicine was gradually diminished, and ultimately discontinued. The pulse fell regularly, and the patient is now convalescent.”\* M. Beau gives in ordinary cases eight grains of quinine, increased or decreased according to the sensibility of the

\* *Medical Times and Gazette*, vol. xl. (1859), p. 20.

patient, but has never had occasion to give more than four grammes (sixty grains) in the twenty-four hours. Even when the inflammatory tenderness is confined to one spot, and when the malady is to a certain extent overcome, it is often necessary to increase the dose to a small extent, as from the constitution becoming accustomed to it, the original dose would not be sufficient to retain the mastery of the disease. The quinine must not be diminished too rapidly, nor discontinued too soon. Cases have occurred in which the remedy could not be suspended, without a relapse, even up to the eighteenth day. When the stomach rejects the quinine it must be administered in some other form, as per enema. Quinine has no influence over the local morbid products\*—that is, it acts purely as a neurotic, and as only a neurotic can act, in checking the inflammatory process *in limine*.

This method of treating inflammations completes the eyele in a singularly interesting manner, and aids remarkably in proving that the efficacy of bloodletting in the treatment of inflammations depends upon its neurotic action, at the same time that it shows that, from our present advanced knowledge of therapeutics, we are now enabled to obtain all the advantages of that treatment without exposing ourselves or our patients to its risks and certain dangers. The acknowledged advantage obtained in the treatment of intermittent fever—a disease supposed to be specially amenable to quinine, yet capable of being treated with opium, by

\* *Loc. cit.*, also p. 237.

conjoining the two remedies—leads us to hope that the treatment of inflammations, supposed to be specially amenable to opium, yet capable of being successfully treated with quinine, may receive at least a corresponding advantage by a similar conjunction of these two remedies, whether, with Drs. Gübler\* and Nivison,† we regard these two remedies as to a certain extent antagonistic in their action, yet capable of being beneficially combined; or whether, from the similar action of a combination of quinine and belladonna—the latter indubitably antagonistic in its action to opium—we regard ourselves, as is most probably the case, as yet upon the threshold of novel and important views in therapeutics.

I need say nothing as to the neurotic character of the action of OPIUM; this has been universally acknowledged, and is capable of easy proof.‡ That its action

\* *Op. cit.* July 1858, p. 16. Gübler found that when 30 grs. of quinine were given in combination with 1 gr. of opium, the ordinary phenomena of cinchonism were not developed.

† *Op. cit.* Sept. 1861, p. 250, and *American Journal of Med. Science*. Dr. Nivison alleges that quinine prevents the action of opium on the biliary and urinary secretions, as well as restricts its narcotic action and antagonises it, so that a full dose of quinine acts as an antidote to the action of opium, and even enables it to be taken when it could not otherwise be borne; in such cases, also, the unpleasant after-effects of opium are never developed. He adds that in acute inflammatory affections, which can be promptly treated by opium, the risks and dangers of fatal congestions are avoided by combining it with quinine, thus confirming the view I have already stated theoretically before becoming acquainted with his opinion.

‡ Headland *On the Action of Medicines*, 3d ed. Lond. 1859,

on disease is such is chiefly a matter of inference, and as such must be allowed for the present to rest—"Tam homini, quam morbo, somnum conciliat," says Paracelsus: it may send disease to sleep as well as the patient. Opium affects both the organic and the sensitive as well as the motor system of nerves; it therefore allays the increased susceptibility of the nerves to morbid impression and controls spasm, both most important points in the therapeutics of inflammation. From the action of opium, however, being chiefly if not entirely confined to the nervous system, its agency is most valuable at the commencement to check an inflammation, or merely to relieve pain during the course of it, hypersecretion or the reverse almost invariably requiring the combination of opium with other remedies, or its replacement by them. This is specially the case in cholera, diarrhœa, dysentery, catarrh, and other inflammatory affections of the mucous membrane attended by flux, which, at the outset, a few grains of opium are capable of checking at once, *tuto, cito, et jucunde*, but which, when fairly established, will resist any amount of that drug, and must be cured by recourse to other more purely astringent remedies.

ANTIMONY has also been acknowledged to be an important and powerful neurotic, and for my present object has therefore only to be referred to. It is of

p. 415. The importance of opium in the treatment of inflammation was distinctly stated in a paper by Dr. Armstrong in the *Transactions of the Associated Apothecaries*, Lond. 1823, p. 309. He refers to a practitioner who relied solely upon its use, p. 322.



importance to remark, however, that its action upon the blood, by which it diminishes its plastic (fibrinous) elements (Richardson, *Chemist*, vol. iii. p. 615), is of secondary consideration in the therapeutics of inflammations, and in fact constitutes one great danger in the employment of antimonial remedies.

IPECACUANHA is also a neurotic remedy of great power, acting freely on the vagus nerve, and specially on the pulmonary organs.\* Inasmuch, however, as it has little or no action upon the constituents of the blood, it is, though not so powerful, yet a much safer remedy than the preparations of antimony. Combined with opium it forms one of our safest and most trustworthy neurotic remedies—a remedy well fitted to cut short inflammatory action *in limine*,† and to which its treatment, even when prolonged, may often be very safely trusted, both with comfort to the patient and satisfaction to the physician.

There is still another most powerful neurotic remedy whose actions have as yet, I think, not been sufficiently inquired into—I refer to CHLOROFORM. Shortly after the introduction of chloroform to medical practice as an anæsthetic, by Professor Simpson, in November 1847, I satisfied myself, by repeated inhalations, and by taking small doses (in the form of chloric ether) internally, that it was not, as was then generally supposed, a stimulant,‡ but certainly at least a calmative,

\* Headland, *op. cit.* p. 290.

† Christison's *Dispensatory*, ed. 1842, p. 565.

‡ In his first paper upon chloroform Dr. Simpson recom-



and probably a sedative, of great value. On the 3d of April 1848 I attended an Irishwoman in a tedious labour of her first child. Shortly after her safe delivery she was seized with violent eclampsia from exhaustion. On my return home I sent her a draught containing one drachm of chloroform with one drachm of solution of the muriate of morphia (Ed. Phar.), with orders to take one half immediately, and the other one hour afterwards if not better. From some misunderstanding, the whole was administered at once; and on my return I found the woman in a refreshing sleep, from which she did not awake for about twelve hours. For three days subsequent to this she continued in an apathetic condition, apparently unwilling to move or to express a wish, but taking food when offered and moving freely when desired, and with a pulse persistently about 60. She made a most excellent recovery; and I need not add that I was highly satisfied with this unintentional experiment on the internal use of chloroform. And from that day to this I have continued to use it with the utmost confidence in fitting cases as one of the safest and most powerful sedatives. Chloroform is the best means of quieting small aquatic animals and animalculæ for the purposes of microscopic examination; and in these its sedative action on the circulation is most evident, not only on the capillary

mends it as a "*diffusible stimulus* to avert ague, ephemera, etc.;" adding, "perhaps it may be used by inhalation in small quantities when the stomach will not bear wine or other stimulants" (*Edin. Med. Jour.* December 1847, p. 417).

circulation of the gills of newts and tadpoles, but especially on the action of the heart of the water-flea, which, in its natural state, beats at about the rate of 150 per minute, but which can be brought down by chloroform, without injury to life, so low as one or two beats in the minute. This sedative action is associated with a regulative action on the circulation, which makes it—in the form of chloric ether—so valuable a remedy in chronic affections of the heart, and which has been so powerfully evinced, as I have been assured by a competent observer, as to restore the radial pulsations in those moribund, while it relieved the pain from which they were suffering, and diminished the frequency of the heart's action. For these reasons chloroform has been found to be a powerful remedy in peritonitis, and one to which, in such cases, we can resort when no other remedy would be of any avail : in dysentery relieving the tenesmus more certainly and as effectually as leeching the anus ; in pneumonia, and in bronchitis and catarrh, full inhalations efficiently checking the two latter diseases when administered sufficiently early ; while it modifies and ameliorates the course of hooping-cough, and is one of the best and most easily-administered remedies for the convulsive cough of phthisis. In one case also of lockjaw, in which I employed it, no spasms occurred after the patient had been brought under its influence by internal administration, though the fatal influence of a large suppurating wound in a debilitated constitution could not of course be averted.

About the same time the attention of Continental observers was directed to the importance of anæsthetic remedies as curative agents ; and in 1848 Wucherer published his work upon the inhalation and local employment of sulphuric ether and chloroform as remedies.\* Of the two he preferred the chloroform, because it acted quicker and more pleasantly ; † and of it he employed three inhalations of from eight to twelve drops three or four times a day in pneumonia till vesicular respiration was fully restored. He supposed that by its use not only was the chain of innervation broken, but the chloroform being excreted as carbonic acid and water, respiration proper was diminished, the retrograde metamorphosis of the tissues prevented, and thus a certain amount of strength was saved, and an apparent tenacity of life imparted. Wucherer continued the inhalations till the pain had entirely ceased. He occasionally commenced the treatment by bleeding. The respiration became easier in two or three minutes, the cough moderated in two or three days, and the fever mostly ceased within the same space of time. The retrograde

\* *Die Inhalation und die Ortliche Anwendung des Schwefeläthers und Chlorätherid als Heilmittel*, Freiburg 1848 ; and Cansatt's *Jahresbericht*, 1849—Kleneke's "Report upon Anæsthetics."

† I myself never employed ether as a sedative, because though an indubitably powerful neurotic in large doses, yet my personal experience was that it left behind it an uncomfortable feverish feeling, with a quickened pulse, which lasted a day or two, very different from the cool depressed feeling and retarded pulse following the inhalation of chloroform ; and this estimate of the two drugs agrees, I believe, with the estimate of all surgeons.

metamorphosis of the hepatisation was more rapid than under other modes of treatment, and the restoration to strength was rapid. In 1850 Baumgärtner, assisted by several medical friends,\* published his report on the employment of chloroform in inflammation of the lungs. He states that it relieves the pain in the side and the oppression, lessens the cough, changes the glutinous into a mucous phlegm, lessens the fever, and retards the pulse; while the objections to it are, that it sometimes causes vertigo, headache, and lowering of the powers of life.

Clemens (in the *Deutsche Klinik* for 1851, No. 52)† was the next to give to the world his experience of the treatment of pneumonia with chloroform. He supposed that it excited not only a dynamical influence upon the nerves, but also a chemical influence upon the constituents of the blood, and without the latter he regarded the cure as unattainable. He also supposed that it had a resolving influence upon the stagnant blood in the capillaries, which not only prevented the occurrence of hepatisation, but also assisted in promoting its retrograde metamorphosis. He first pointed out the frequent occurrence of rapid and permanent sinking of the pulse during the treatment of pneumonia by chloroform. He employed ʒj. of chloroform for each inhalation, and

\* *Neue Behandlungsweise der Lungenentzündungen, etc., mit Beiträgen von Helbing, v. Rotteck, Schmidt, v. Wänker, Weber, Werter, u. Wucherer*, Stuttgart 1850; and Canstatt for 1850—Dr. Löbel's "Report on Diseases of the Chest," p. 255, etc.

† Klencke's "Report on Anæsthetics," in Canstatt's *Jahresbericht* for 1851.

relates a case of double pneumonia in which 142 inhalations—amounting in all to 18 oz. 6 drs.—were employed during 13 days, without the slightest bad symptom either at the time or subsequently.

In Henlé's *Zeitschrift* Varrentrap<sup>\*</sup> gives an important paper on the treatment of pneumonia by inhalations of chloroform. He employed on the average 60 drops of chloroform for each inhalation, and these were repeated on an average 8 to 12 times in the 24 hours. On an average the treatment was continued for 10½ days, and comprised 74 inhalations; the fewest number of inhalations was 27 in 5 days, and the greatest number 162—about 1bij.—in 15 days. He remarks that the pulse sometimes fell to 80 or 70, while the local chest symptoms and the general condition continued unimproved: indeed in case No. 17 the pulse fell to 72, without again rising, while the patient was very poorly and actually near to death (Varrentrap's only fatal case). Hutawa, Richter, Frohn Müller and Salawa,† Stoham† and Theile,§ have also related their experience in regard to this mode of treating pneumonia; and all, with one

\* Henlé u. Pfeufer's *Zeitschrift*, neue folge, 1851, bd. i. p. 1.

† Hutawa—"Chloroform Einathmungen gegen Lungenentzündungen" (*Med. Zeitung der Preussischen Vereins für Heilkunde*, No. 11, 1855). Richter—"Chloroform Einathmungen gegen Pneumonie u. Bronchitis" (do. No. 32, 1855). Frohn Müller—"Das Christliche Krankenhaus zu Fürth im Jahre, 1853-4" (*Deutsche Klinik*, No. 2, 1854). Salawa—"Ätherinhalation bei Pneumonie" (*Ungarisches Zeitschrift*, v. 29, 1855). Vide also Caustatt's *Jahresbericht* for 1855.

‡ Schmidt's *Jahrbuch*, bd. lxxxiii. p. 295.

§ *Ibid.* bd. lxxv. p. 36.

accord, have placed on record the satisfactory influence the chloroform inhalations had upon the comfort of their patients, and the favourable results in regard to recoveries\* obtained from its use ; and yet this mode of treatment has now fallen so out of use that it is no longer heard of. This is in part to be accounted for by the trouble connected with the administration of chloroform by inhalation ; by the great and unavoidable waste connected with this mode of administration—a circumstance which also renders the actual amount inhaled uncertain, thus increasing the danger connected with it, from the occasional sudden depression of the heart's action—in an unavoidable and unlimited degree ; and lastly, from the expense of this mode of treatment. All those

\* According to Baumgärtner's work there were treated by himself and coadjutors—

		193 cases, of whom 9 died.			
By Clemens there were treated		12	„	„	0 „
„ Varrentrap	„ „	23	„	„	1 „
„ Hutawa	„ „	12	„	„	0 „
„ Frohnmüller	„ „	12	„	„	0 „
„ Salawa	„ „	15	„	„	0 „
„ Stoham	„ „	30	„	„	0 „
„ Theile	„ „	6	„	„	0 „

Total. 303 cases, of whom 10 died.

That is, 1 out of 30·3, or 3·3 per cent—a particularly small mortality considering the number of cases treated ; the number of observers, for the same treatment often varies in its results in different hands, and when these results approximate when employed by different observers the value of the remedy may be more safely acceded to ; considering also that some of them were treated by inhalations of ether instead of chloroform, and also that several were bled, neither of these circumstances being conducive to recovery.



difficulties may, however, be avoided by administering the chloroform internally—one drachm thus administered producing with safety the same results obtained by the inhalation of one ounce. From the difficulty of making a perfect emulsion free from the risk of producing gastric disturbance, I have been in the habit of administering the chloroform, dissolved in olive-oil, in the proportion of ʒj. to ʒj., with which it forms a permanent mixture, easily taken, and wholly free from any unpleasant results : the dose is ʒj. every two or four hours. In this dose all the good effects of the chloroform are obtained without trouble and at little expense, and I have found it an admirable sedative in all inflammations, but particularly in pneumonia. The number of cases I have treated with this, however, has been far too limited to admit of any important deductions. I must also add that, whether from any chemical action on the blood, or from some other cause, I have found the calmative action of chloroform more difficult of attainment than its sedative, which is peculiarly depressing and therefore dangerous to the vitality ; and therefore I have reserved its use for prolonged cases in which the fever ran high, employing other neurotics in all others, and even in these combining the use of chloroform with other neurotics administered alternately, and particularly with opium and ipecacuanha, which, from their powerful action on the nervous system, and their probably total inaction on the constituents of the blood, are alike the best and the safest remedies we can employ. For the experience of all ages, and the



deduction from the theory of the causation of disease I have already propounded, agree in this, that inflammations must either be checked *in limine*, or else they can only be moderated and their symptoms palliated ; that, therefore, it is important to employ in their treatment such neurotic remedies as are capable of producing an immediate and decided action on the nervous system, the great co-ordinator of vitality, and also of avoiding all such as are capable, by their mechanical or chemical action on the constituents of the blood, of injuriously disturbing the natural tendency to the restoration to health. Thus, as we have just seen, all the favourite remedies for inflammation of the present or of bygone times have been chiefly distinguished for their immediate and direct action upon the nervous system ; while we have the testimony of Drs. Cullen,\* Alison,†

\* *MS. Clinical Lectures*, vol. i., in the library of the Royal College of Physicians, Edinburgh, where Cullen distinctly states that bloodletting retards convalescence and renders the patient extremely sensitive to cold and liable to relapses.

† “The part of the statements of those witnessing such practice”—the cure of inflammatory disease by homœopathy—“which I was most inclined to distrust, was the assertion, that the convalescence of the patients thus treated was usually more rapid than that of patients with inflammatory complaints treated by fuller evacuation. \* But on watching the progress of cases of the kind . . . I have been satisfied that the observation is correct ; the absorption of the inflammatory effusion in such cases, even when very extensive . . . having often been effected with remarkable rapidity, and the subsequent rapid recovery of strength having indicated that the blood, although it must have undergone a change in the course of the inflammation, had quickly recovered its natural properties” (*Edin. Med. Jour.* November 1852, p. 507).

etc., that that particular remedy which, from its nature and mode of action, has an unavoidable disturbing influence both on the quality and on the quantity of the blood—I refer to bloodletting—retards convalescence and renders the patient more liable to relapses, a statement which is confirmed by all who have adopted the expectant system so far as to abstain from bloodletting, who one and all re-echo the statement made to me long ago by Skoda,\* and since then confirmed by Dietl† and others, and which I know to be true from my own experience, that abstinence from bloodletting promotes a more rapid, complete, and permanent restoration to health. At the same time those other remedies which, besides having a neurotic action, act also chemically on the blood, have a much more easily restricted action, and though never so safe as those I have pointed out, may yet be occasionally employed without much apparent disadvantage; while all those remedies—such as mercury, etc.—which act by chemically altering the constituents of the blood: as hæmatics therefore and not as neurotics: have only got included among the antiphlogistics by misadventure, and, however available in other diseases, or possibly in some neglected cases of certain forms of inflammation, are utterly to be discarded in all acute and recent cases.

By the theory of the causation of disease which I

\* *Brit. and For. Med. Rev.* October 1846, p. 591; *Edin. Medical and Surgical Jour.* vol. lxxviii. No. 173, p. 399.

† *Der Adcrlass in der Lungentzündung*, Wien 1849; and *Brit. and For. Medico-Chir. Rev.* 1858, vol. xxii. p. 14, etc.

have propounded, all the stimuli to vitality are regarded as producing disease when acting in excess or defect beyond certain necessary limits of compensation: it will not surprise us, therefore, that even beyond these limits those stimuli are still capable of exercising an influence upon the course of the disease which may be beneficial or the reverse. It is to this fact that much of the success of homœopathy is due; and, in particular, to it is due the circumstance that even under homœopathic treatment inflammation may, it is said—and I can well believe it—be occasionally cut short. The abstraction of all hurtful stimuli, and the soothing influence of such as are beneficial, must always exercise a modifying effect upon the course of an inflammation, which may in certain exceptional circumstances serve to cut short its course, beneficially supplementing a properly-devised treatment, and in certain rare cases operating powerfully of itself where the treatment employed has been entirely of a negative character. I am the more emboldened to make this statement because, when in 1846 I went carefully over the hospital reports of Skoda's cases of pneumonia,\* in which the treatment was chiefly negative,† I nevertheless found that all those cases which had been admitted in the first stage‡ rarely had a severe disease, though in all

\* Comprising 392 cases (*Edin. Med. and Surgical Journal*, vol. lxviii. No. 173, p. 397).

† *Loc. cit.* p. 398.

‡ *Loc. cit.* pp. 399, 400. By the first stage I mean, of course, that of which a fine crepitant râle is the sole local characteristic. Among the Viennese patients this stage is, or was,

human probability the primary symptoms must have been so, from their having induced the sufferers thus early to seek for relief. In my own practice I have never had one patient who came to me in the first stage—that is, with a fine crepitant râle as the only local symptom—in whom the disease has passed beyond it; opium and ipecacuanha always sufficed to check it. But though firmly regarding such cases as instances of pneumonia cut short, I have—to avoid all cavilling—never included any of them amongst my recorded (*vide antea*, p. 38) cases of pneumonia. To show, however, that such cases may be truly regarded in this light, I shall quote a similar case, simply the last of the kind that has occurred to me.

On the 10th of June 1865 I was sent for to see the servant of a medical man in town, supposed to be labouring under a threatening of pleurisy. I found her in bed, with her tongue somewhat loaded, her face flushed, skin hot, pulse 120, small and soft; she was breathing with great difficulty from intense pain at the lower part of the right side. She could, however, turn readily without much pain, and complained of but slight pain on pressure. Over the lower part of the right side anteriorly the percussion sound was somewhat dull; elsewhere it was normal. Over the dull portion the respiration was puerile vesicular, elsewhere normal.

very generally wanting, the respiration passing at once from pure vesicular to undecided or bronchial (*Vide Skoda's Abhandlung über Perkussion und Auscultation*, Wien 1844, pp. 120, 255, *note*).

She was ordered to have 20 drops of laudanum with 30 of ipecacuanha every two or three hours, with a warm poultice over the side. Next day she was looking cool and comfortable, her pulse down to 80, her breathing easier in every way, with only a slight catch on deep inspiration. The medicine was ordered to be gradually dropped. In the course of a day or two she was up and going about as usual. Her master, who is practically well acquainted with the treatment of inflammation by bloodletting, regarded the case as one of pleurisy cut short; and I do not well know what other term could be properly applied to it. The girl herself was very well pleased with her treatment, and assured me that fourteen years ago (her age is now thirty) she had a precisely similar attack, for which she was bled freely from the arm, besides other remedies, and from which she only recovered after a fortnight's tedious illness, and then in a very different plight from what she was in the present case.

The last case which occurred to me previous to the one just narrated is equally instructive from a different point of view, as showing the advantage to be derived from this treatment at the end as well as at the commencement of the disease. On the 26th of March I was called to see a child aged about eight years. She was taken ill with a rigor at 5 P.M. on the 21st, and had been feverish and ill ever since. Complaints now of intense pain in the chest on breathing, never-ceasing cough, face flushed, pulse 120. On percussion, I found the left supra-scapular space posteriorly quite dull;

anteriorly over the same part of the lung the percussion sound was tympanitic. The respiration over the dull part was pure bronchial ; elsewhere it was vesicular. As the disease had already lasted five days, and as the average duration of pneumonia is only from seven to nine days, I contented myself with soothing the cough with a mixture composed of ipecacuanha, soda, and camphorated tincture of opium. Next day she was much easier, and on the 28th her pulse was down to 80. She was up, and apparently well ; the chest still a little dull where formerly, but the respiration already vesicular even there.

I have only to add, in conclusion, that these two cases teach us this, if nothing else, that good physic is not profitable except to the patient, who can scarcely ever be persuaded that he has run any risk or been in any danger. To cure a patient of an acute attack of pneumonia in three or four visits is certainly a throwing away of the mercies on the part of the physician ; while the présent system of paying medical men by the visit is a positive premium paid to unskilfulness.

## CHAPTER SIXTH.

## ON FEVER.

*"He fed fevers."*—Dr. GRAVES' (Autographic) Epitaph.

IN a short work like the present, in which it is not intended to enter at large upon the treatment of disease, but only to point out how far that treatment has been essentially in unison with a theory of its causation which it is believed will not only explain all discrepencies in that respect in time past, but also open the way to greater and more certain advances in time to come, the simple statement with which this chapter is headed is almost all that I require to say. It is an acknowledgment, by one of the first authorities upon fever, that the most important part of its treatment is to support the system—cautiously, I may add ; for feeding fevers is no new idea, but was often injudiciously carried out—so as to afford time for the cycle of compensating organic changes to be wrought out and health to be restored. It is a confession of impotence, which, humiliating as it is, I know of no facts capable of alleviating. And yet it is a statement thoroughly consistent with all that I have advanced, and a confession that, in regard to



fever at least, we are content to assume our proper position as *ministri et interpretes nature*.

Nevertheless we are not altogether powerless even in regard to the treatment of fevers. Ordinary ephemeral fevers are capable of being much relieved, and infantile remittents are made to cease by treatment as certainly as we cut short an intermittent by opium, quinine, or other nervine tonic; and though neither eruptive nor continued fevers can be cut short, the comfort and safety of the patient are capable of being much increased by judicious treatment.

*Ephemera*—the simplest form of fever—affords a well-known instance of fever arising from the influence of temperature (cold), though unquestionably a certain amount of mobility of the nervous system (delicacy, natural or acquired) is required to ensure its production; its etiology is therefore precisely the same as that of inflammation, from which it differs in being unattended by any local injury to the organism. The reflex action of the nervous system seems to be expended upon the vascular system generally; while, from the efficient state of the vitality of the system, the extraordinary involuntary reaction induced is sufficient to restore the balance of the functions. When there happens to be a weak organ, and the ephemera is followed by an inflammation, as of the breast—which frequently happens in childbed—the ephemera, which is then popularly said to settle in the part, can only be regarded as the initial phenomenon—the first stage—of the inflammation. The best treatment of ephemera, therefore, consists in

the administration of those neurotics which we have seen to be best fitted to check the initial spasm and aid in the development of reaction, and in particular of opium and ipceaeuanha.

From *Ephemera* to *Continued Fever* we may proceed by one of two ways. In the first place we may suppose the several stages of the *ephemera* to be prolonged from four to eleven days, when we have it forming *Simple Inflammatory Fever*, which, in its turn, by a gradual prolongation of its course and aggravation of some of its symptoms, may pass into *Typhus*. Or we may regard the *ephemera* as repeating itself every other day, with an interval of apparent health, thus constituting the most characteristic type of *Intermittent Fever*—the tertian—from which all others may be deduced, which is very closely allied, if not identical, with ordinary *Remittent Fever*, distinguished by the recurrence of each febrile paroxysm previous to the complete cessation of the preceding one, while this may be supposed to pass into continued fever by the gradual abolition of the remissions; and this view is to a certain extent supported by the fact that almost all continued fevers present the tendency—more marked at their commencement—to incomplete and more or less regular remissions.

One curious fact in support of the latter view is that the Terrai fevers of India, which are ordinarily developed without incubation as intermittents of the tertian or quotidian type, are developed as remittents, generally of a severe type, when the period of incubation has

amounted to ten or fifteen days,\* while we have the authority of Sydenham† and very many authors in favour of the connection—and apparent identity of course—between intermittent, remittent, and typhus fevers.‡ The tendency of the present day is to subdivide even continued fever into at least three distinct varieties, arising from different causes and pursuing different courses. Without having had sufficient personal experience thoroughly to convince me of the truth of this modern view, I am yet inclined to believe it so far true as to regard these fevers as distinct, and only capable of originating themselves catalytically—by contagion—although they may all nevertheless originate from the same miasmatic cause, modified by the co-existent state of the body ; for how else could we have bilious remittent, relapsing fever, typhus, and typhoid, arising under apparently similar external circumstances, though undoubtedly only propagating themselves?§

\* *Indian Annals*, July 1856, p. 551.

† *Works*, by Swan, pp. 13, 49, 51-55, 65.

‡ Vide *Armstrong's Life* by Boott, London 1834. "Fever," *passim*.

§ For example, there is hardly anything but enteric fever to be seen nowadays in Edinburgh, yet there is unquestionably far less pythogenic material to be found about its wynds and closes now than was the case formerly, when enteric fever was so rare that the *constitutio dothinentERICA* was regarded as only giving rise to a secondary or intercurrent affection. It might be worth while to inquire whether the cessation of ague was not connected with an increase of continued fever, and whether places formerly aguish are not now remarkable for the prevalence of other zymotic diseases, of a different type mayhap, but arising from a similar cause. In connection with this subject I

This subject is, however, too wide to be entered upon here, and is besides foreign to the scope of the present work. It is sufficient to point out that it is universally acknowledged that fevers are originated through the nervous system ; that when they can be cut short—which is only when they present more or less distinct paroxysms—that is, regular fits of fever, which is not properly cut short, but merely its return prevented—it is by the action of neurotics ; and that when they cannot—that is when the cycle of change is more prolonged, and the tendency to mere recurrence thus exhausted—the only safe treatment to be pursued is cautiously to support the strength, maintaining the lamp of life burning till the necessary cycle of changes is completed and health restored. The ordinary course of fever is not only like, but is convalescence, and therefore not rashly to be interfered with by any less certain resources of art. It is only its recurrence, when its type is of that character, that is and may be prevented by art.

What are called the exanthemata or *Eruptive Fevers* are more unequivocally the result of specific poisons, which, acting through the nervous system, produce, according to the pre-existing state of the organism, a series of symptoms more or less varied in character and intensity until they become eliminated by being thrown out upon the skin and mucous membranes. The great object in treating these peculiar forms of fever, as in may refer to Dr. Christison's admirable paper upon "Epidemic Diseases," *Edin. Med. Jour.* November 1863, p. 421.

all other cases of poisoning, is to promote the removal of the poison from the system ; and this we do by employing eliminants, chiefly those which tend towards the natural emunctories of the system. The only exception to this is small-pox, which naturally tends to throw out upon the surface of the body a quantity of matter which tends not only to act as a drain upon the vitality of the system, but also forms a cause of secondary irritation to the already enfeebled organism. In this particular exanthem, therefore, it is of importance to attempt to check the elimination of the poison in the peculiar mode which it affects ; or, at all events, to provide for the speedy reabsorption of the matter and its elimination by other channels. We therefore employ in its treatment such neurotics as act also on the constitution of the blood, and combine them with such hæmatics as seem specially applicable to the circumstances. A judicious combination of antimonials with mercurials is accordingly found to be perhaps the best and most certain mode of relieving this loathsome disease, and of averting the injurious results to be expected either from the too copious elimination of the poison, or from its retention in the system. This mode of treatment, however, requires to be carefully and judiciously conducted, and other neurotics resorted to according to the necessities of the case.

## CHAPTER SEVENTH.

## OF CHRONIC DISEASES.

*“ Morbi acuti Deum habent autorem, chronici ipsos nos.”*

SYDENHAM.

CHRONIC diseases are almost peculiar to middle age and to advanced life. They do occur earlier, but exceptionally, unless we include phthisis, which, though generally more or less chronic as to duration, is yet not truly a chronic disease, but one *sui generis*, and in a great measure dependent for its peculiar characteristics upon deficient organic vitality, the consideration of which I must for the present omit.

Chronic diseases may be divided into two great classes : those arising from the results of former disease, and those arising from the persistent injurious (excessive or defective) action of some one or more of the ordinary vital stimuli, or of some similar stimulus. These two classes are often combined. Thus dropsy from diseased heart is an instance in which both chronic affections are the direct result of former disease, or congenital debility, or malformation ; and this dropsy

may merely prove a source of inconvenience, discomfort, and oppression, as when it is effused into the thoracic or abdominal cavities ; or it may, when effused into the cerebral cavities, prove a direct irritant, and itself the cause of various acute or chronic affections. In like manner, diseased liver or kidney is the result of former disease, and may prove of themselves sources of discomfort ; but their greatest danger lies in the alterations produced by their agency upon the blood—that great internal stimulus to vitality. These alterations are produced either by permitting the escape of part of the blood (as the albumen) which ought to be retained to maintain its healthy condition, by the retention of certain constituents (as the urea) which ought to be excreted, or by the defective secretion of other matters (as the bile) requisite for the due performance of digestion, whereby the healthy condition of the blood as to quantity and quality is maintained. These conditions sometimes act and react upon one another through the nervous system—the great co-ordinator of vitality—and thus so complicate the symptoms as to render their unravelling and the elucidation of the primary defect a matter of very considerable difficulty. This, however, is more or less simplified by remembering that there is no such thing as a true neurosis—that is, that the nervous system of itself never originates disease. Cases do occur in which morbid affections, arising from the pressure of obscure tumours, the disorganisation of latent inflammation, or defective nutrition from blood impure in



quality or from any cause deficient in quantity, appear as if they originated directly from the nervous system. But it is a step in the right direction, undoubtedly substantiated by all we know of physiology, to regard the nervous system as a co-ordinator solely, but never as an originator of any vital movement: the diagnosis is thus rendered more easy, and the treatment simplified.

One remarkable affection has of late years given rise to considerable discussion as to the direct neurotic origin of disease—I refer to that termed Exophthalmic Bronchocele. This disease, Dr. Laycock argues, arises directly from some peculiar condition of the cerebro-spinal system;\* while Dr. Warburton Begbie supposes that its true pathology “lies both in the blood and in the nervous system, but that the ‘primum mobile’ is the former; that an altered state of the blood—for a time stopping short of what is generally known as anæmia, but in many cases amounting to well-marked anæmia—acts directly on the nerves of bloodvessels and on the nerves of the heart, ‘sanguis moderator nervorum;’ that, as a consequence, their rhythmical movements are seriously affected, and dilatation of the heart’s chambers, and of bloodvessels, arteries, but chiefly veins, results; that for a lengthened period the bronchocele is truly a vascular enlargement and dilatation, but that in course of time hypertrophy and degeneration of gland-structure result; that the ex-

\* *Vide* papers in *Edin. Med. Jour.* February 1863, p. 681; and July 1863, p. 1.

ophthalmos, which is not a necessary consequence any more than the bronchocele of the disordered state of the blood and neurosis of the bloodvessels, depends upon congestion and vascular dilatation of the ophthalmic vessels with effusion of serum into the post-ocular cellular tissue.”\* To this theory of the peripheral action of morbid blood in the production of this disease Dr. Laycock very properly objected that “morbid blood acted on all parts of the system, and the effects were not limited, as here, to the heart, the thyroid gland, and the eyes.”† Neither of these views seem to me tenable. I agree with Dr. Laycock in regarding his objection to the theory of morbid blood valid; but I object to his theory that the nervous system is simply a co-ordinator, and has never been shown to originate morbid actions except by reflex action—the section of any nerve by vivisection acting only similarly and equivalently to a peripheral excitant. I conceive that this peculiar disease presents a very exquisite example of the difficulties to be encountered in the elucidation of etiological problems. I hold, however, that it is one which we need not despair of unravelling, and that further investigation will ere long supply us with the right clue. My own idea is, that the only condition supplied by the spanæmic state of the blood is an unusual mobility of the nervous system, always coincident with it; but as this mobile condition may exist independently of anæmia—indeed, exceptionally, in the very opposite state—it is not a

\* *Edin. Med. Jour.* September 1863, p. 219.      † *Loc. cit.* p. 268.

positive requisite, although it is, for obvious reasons, an almost constant concomitant; while the direct excitant of those peculiar phenomena which constitute this remarkable disease is to be sought elsewhere, probably in different quarters in different cases—sometimes in the emotions, which are powerful reflex agents, and sometimes in the state of the gastric (and hepatic) secretions. Careful investigation in future cases will indubitably unravel this point, and thus not only add to our means but increase our confidence in combating this singular affection. I may add, as some support for the statements I have made, that three times I have seen in spanæmic individuals the most violent palpitations of the heart and carotids induced by acidity of the stomach, and allayed at once by antacids. In these cases the violent arterial action was entirely, or almost entirely, confined to the carotids and temporals, and in one instance was very remarkable for its intensity, and forcibly reminded me of a case of exophthalmic bronchocele which I had occasion to see some time previously. Of course in it the vascular excitement was of too short duration for the development of either exophthalmia—though there was an approach to that—or of bronchocele.

In undertaking the treatment of any chronic affection, therefore, we must carefully investigate the vascular and nervous connections of the organ or part apparently chiefly affected, and consider what influences can be brought to bear upon the bloodvessels

and nerves of the part, so as to ascertain how far the symptoms are dependent upon mechanical interference with its circulation and innervation ; upon the results of former disease, however this may be found to act ; or upon the persistent excessive or defective action of some one or more of the ordinary stimuli to vitality. Having carefully ascertained these facts, we may confidently proceed to the treatment of the patient, certain of at least alleviating the symptoms, and, where there is no pre-existing organic disease, equally certain of in due time promoting the restoration to health, provided the patient maintains his confidence in his medical adviser, and submits to his prescriptions with implicit and unhesitating obedience ;—never forgetting that, in most cases, chronic diseases are but the accumulated results of the evil or injudicious habits of many years, which not only require to be amended, but which also require time for the eradication of their results and the restoration of the healthy play of the functions. I have heard men state that they would rather change their doctor than their dinner-hour, and such a speech is excusable in those who prefer their habits to their health ; but all who really wish for restoration of health must never seek to degrade their physician from his rightful position as confidential adviser to a mere dispenser of fancied nostrums. Such conduct is exercised at the certain personal peril of its promoters, and tends at once to the degradation of legitimate medicine and the exaltation of unprincipled quackery, which knows well how to take advantage of the folly, and by the

strenuous advertising of some one-sided theory having a partial basis in truth to secure for itself a large share of the credit and the rewards due only to legitimate medicine.

Indeed, when the blind credulity of the public in medical matters is considered, and their unwillingness to have their habits or mode of life, however injurious, interfered with, we cannot wonder at there being so many quacks and impostors, but on the contrary that there are still so many upright medical men. Sam Slick says : " You must treat men as you would children. Tell them to shut their eyes and open their mouths and take what you give them, as you do when you play with the little dears, and as long as it is sweet and pleasant they will swallow anything." But the instant you attempt to deal with them as men, and to engage their reason on your side, then they go off upon some crotchet of their own ignorance, and will not listen to the words of truth and soberness. Tell them with a stern face that you are now " passing your hand between their liver and their ribs,"\* or insinuate with a gentle simper that the decillionth of a grain of aconite will cure a rheumatic fever, and multitudes will grant a ready and unhesitating if a wondering belief; but tell a man he is bilious because he has eaten and drunk too much, and see if he will not tell you, with all the protestations of injured and indignant

\* As was done by a famous quack of former days, Dr. Mandoc (vide *Adventures and Recollections of Col. Landmann*, London 1852).

innocence, to mind your own business, and cure him without meddling with his private affairs. So it comes to pass, that we are made to connive at the follies of mankind, and it is a very questionable benefit to them that our art is able temporarily to relieve them from the results of their own imprudences. In the treatment of chronic diseases, however, it is of the very highest importance that the physician be made the confidential adviser of his patient in everything. Without that he is forced to lay down *ex cathedra* some formal rules which may be useful, but which, being framed generally to suit the mass, can never prove so useful as that more careful and personal application of those general rules which can only be the result of a confidential consultation between physician and patient. And this is more especially the case because, in every chronic disease, the very amount of time necessary for its treatment renders all the natural stimuli to vitality agents of the utmost importance. All these natural stimuli, therefore, with their natural reactions upon one another, must be duly taken into consideration if we hope to promote a cure; and we may be sure that, however useful certain remedies may be as adjuvants, we shall be far more likely to do good by omitting them, and carefully attending to the proper employment of all the natural stimuli, to which alone Homœopathy owes any advantage it possesses, than we shall be by devoting our attention, however careful and discriminating, to the employment of mere adjuvants, to the exclusion, more or less complete, of the skilful use of

those natural stimuli whose influence in altering the status of vitality, though momentarily insensible and minute, becomes in time, and by the constant accumulation of small advantages, an engine of vast power, and one with the employment of which every physician ought to be well acquainted, for "we work by wit, not witchcraft, and wit depends on dilatory time."





## APPENDIX.

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*“Es ist leichter dem Irrthum zu folgen, als die Wahrheit zu suchen.”*

J. G. ZIMMERMAN.

AT page 208 of his *Homœopathy Fairly Represented*,\* Dr. Henderson says: “In reference to the relation between cinchona (Peruvian bark), and the discovery of the homœopathic law, Dr. Simpson commits the same mistake as others had done before him—of asserting that its alleged production of symptoms of ague (for the use of which disease it is the ordinary remedy), constitutes the *foundation* of the homœopathic doctrine. This error he appears plainly to patronise by quoting with approbation these expressions of a Dr. Balfour in reference to this subject: ‘What are we to think of a system whose very foundation is so unstable?’” Perhaps it may be as well to state that in this quotation Dr. Henderson refers to a paper of which I am the author. He then goes on to say: “What would be thought of the opponent of Newton’s discovery of the law of gravitation, or mutual attraction among the heavenly bodies, who should object that it was *based* on the accidental witnessing, by the great philosopher, of an apple falling to the ground? yet the relation between the observed effects of cinchona by Hahnemann and its curative virtues bears a less important part, in the discovery or the

\* Edinburgh, Thomas Constable and Co., 1853.

proof of the homœopathic law, than did the fall of the apple in the discovery or the proof of the universal law of gravitation." It is generally understood, I believe, that Hahnemann was induced to take up and remodel the old dogma of "*similia similibus curantur*," by observing what homœopaths, in their vague way of speaking, call "an ague excited by cinchona,"\* just as Newton is supposed to have had his thoughts directed towards the law of gravity by observing the fall of an apple. Both stories may be myths, at least one homœopath regards both as "finger-posts of the road to truth."† The fall of an apple is, however, a fact patent to every child; without it where would be Newton's law? But, as I have already shown (p. 12, *note*), apart from Hahnemann's vague expression there is nothing in the history of the action of cinchona to prove that it can excite "an ague,"‡ its curative properties cannot therefore depend upon the law of "*similia similibus*;" and it is well that the relations between them and the observed effects of cinchona are thought to bear so trifling a part "in the discovery or proof of the homœopathic law"—only there is surely something amiss with one of the "finger-posts!" When I made the remark so animadverted upon by Dr. Henderson I had just pointed out that my own experience of the homœopathic treatment of intermittent fever by cinchona or any other drug, even when selected by a physician of such distinguished accuracy as Dr. Fleischmann,§ had been by no means favourable when contrasted with a precisely similar fever as treated by large doses of the same drug (cinchona, the usual specific), in the allopathic General Hospital at Vienna, and that a

\* *British Journal of Homœopathy*, No. 1, p. 13.

† Dr. J. Rutherford Russell, *loc. cit.*

‡ I beg again to direct attention to the fact that no one has ever even attempted to show that cinchona can produce a periodical disease. But periodicity is the sole characteristic of an ague, and the only one not producible by a host of things wholly powerless as remedies, whether given infinitesimally or not.

§ *Vide Henderson's Homœopathy*, p. 41, *note*.

similar inefficacy of infinitesimals in the treatment of this disease had been long previously pointed out by many homœopaths of acknowledged skill and experience. "Of the thirty patients (*vide* Appendix, p. 272), who had intermittent fever and were treated by Fleischmann, the average number of attacks was 4·7 ; while under Skoda's treatment the average number could not be more than 3, and was most probably under this. The number of his patients was, I believe, at least as great as Fleischmann's, if not greater ; his cases were as severe ; the patients were afflicted with the same epidemic during the same season ; inhabited the same town, many of them the same quarter ; and belonged to a similar rank in life. They were treated in undoubtedly less advantageous circumstances with respect to food and lodging—yet all were cured. In no one case was the number of attacks more than 4 ; and in none did the fever recur while they continued under observation ; they were therefore cured speedily, safely, and effectually. If it be true that none but homœopathic remedies are capable of effecting this, then Skoda's remedies must have been homœopathic ; but they were not so—were not infinitesimal.

"Were homœopathy true, it would be very extraordinary that a physician practising empirically, like Skoda, should have so simply and effectually cut short the disease, while a scientific homœopathist of experience, with his carefully and scientifically selected array of china, quinine, ipecacuanha, nux vomica, arsenic, and aconite, was unable to do so. It is still more singular that, although it is evident from the results of Skoda's practice that quinine was indicated in the greater number of cases of this epidemic, it fared no better with those of the homœopathic patients who got this remedy infinitesimally than with the others.

"In corroboration of the obvious inference from these facts, we might quote the confessions of homœopathists themselves, or of those who have been reconverted to allopathy. Thus, Kopp states that the disease can neither

be certainly, quickly, nor pleasantly cured by the infinitesimals. Nay, he quotes avowed homœopaths—Grosse, Rummel, Œgidi, and Hauptmann—to the same effect. It must be admitted, however, that while acknowledging this, and in certain cases flying to allopathic doses of quinine, these gentlemen look upon their non-success as merely an imperfection of the youth of their system, and they hope yet to discover the true—*i.e.* homœopathic—specific for ague. Grosse expressly states that ordinary homœopathic specifics only cured ague exceptionally, and that antipsoric remedies alone fulfilled his expectations. But, as Kopp says, this is too bad to submit the poor patient to a method of treatment which allows of the renewal of the dose only after four to six weeks.\* Kopp also tells us, as the result of his own experience (p. 184), that even when the remedy (china) was homœopathically indicated and given in infinitesimal (Hahnemann'scher) doses, it had no influence over the appearance or diminution of the intermitting fever; while, on the contrary, when given in substance in sufficient doses (as sulphate of quinine 2 gr.), it speedily cut the fever short. I think there can be, therefore, but one opinion as to which method of treatment for this disease is the preferable. But what are we to think of a system whose very foundation-stone is so unstable? For, as is well known, it was the action of cinchona that first led Hahnemann to think of his new theory.”†

The peculiarity of intermitting fever is, as is well known, that it is often curable by means acting solely through the imagination—such as a tourniquet applied to one of the limbs, “a spider hung round the neck in a nutshell,” spells, charms, *et hoc genus omne*; we cannot therefore wonder that it has been in many cases cured by

\* *Erfahrungen u. Bemerkungen bei einen Prüfenden Anwendung der Homœopathie*, forming the second volume of Dr. J. H. Kopp's *Denkwürdigkeiten in der Ärztlichen Praxis*, Frankfurt-on-Maine 1835, p. 290.

† *British and Foreign Medical Review*, April 1847, p. 607.

homœopathie globules. But when we find that Skoda unfailingly cured by large doses a similar fever to that which Fleischmann, in one instance at least (*vide* Appendix, p. 272), unavailingly attacked with all the battery of homœopathy; when we find that this inutility of infinitesimals, coupled with the powerful remedial action of the same remedy in large doses, has been acknowledged by so many homœopathic practitioners of repute, we are compelled to acknowledge with Dr. Henderson that the properly-selected remedy ought to be given “*in such quantities as suffice to produce its curative results* ;”\* and therewith Hahnemannism, and all the peculiar characteristics of Hahnemann’s homœopathy, fall at once to the ground.

The mere doctrine of the affinity of similars for similars, and the development by their union of a product different from either, upon which the doctrine of the curative power of homœopathy may be supposed to be founded, was more or less known and acknowledged by all the pre-Hippocratic philosophers;† and Hippocrates himself distinctly recognises the existence and importance of the doctrine *similia similibus curantur* in several of his aphorisms (lib. v. aph. xvii. and xxi. xxiii. xxiv. etc.), and also when he says, in his book, “Περὶ τοπων” (sect. iv)—“Διὰ τὰ ὅμοια νοῦσος γίνεται, καὶ διὰ τὰ ὅμοια πρὸςφερόμενα ἐκ νοσεύοντων ὑγιαίνονται,” etc. And it was never altogether lost sight of in the history of medicine, though it was reserved for Hahnemann to base upon it, to the exclusion of all other principles, a system of medicine which he declared to be the only true method of curing disease (*Organon*, i. 206); and Hahnemann himself has laid down the following three criteria whereby we may judge of any treatment whether it has been homœopathie or no :—

1st, The operation of the remedy must be purely *dynamic* (*Organon*, 5th ed. sec. 16).

\* *Op. cit.* p. 212.

† *Vide* a very interesting paper by Dr. Müller in the *Oester. Zeitschrift, f. Hom.* bd. iii. hft. 2, p. 215.

2d, The choice of the remedy must be in accordance with the homœopathic law, "*similia similibus curantur*" (*Organon*, sec. 147).

3d, The dose of the remedy must not be greater in any given case than is merely sufficient to develop that amount of antagonistic effort necessary to extinguish the diseased action in the organism (*Organon*, secs. 275, 276, 280). In regard to the term *dynamic* I may remark that "Homœopathy has elevated to an axiom the dogma that in proportion as the material element disappears from the remedial agent, so does its medicinal (curative) spirit become developed in intensity and amount." \* This spiritualisation of the remedies has been termed dynamisation, and the actions of these medicinal spirits has been termed dynamic.

This first criterion excludes the employment of all tonics, purgatives, diuretics, derivatives of every kind, and of all those remedies which act by virtue of their physiological properties, in any way whatever, in relieving pain or irritation—as chloroform, opiates, and sedatives of every kind—which, even when they cannot and are not expected to cure, yet can and do render life possible and endurable. The exclusive adoption of this law as a practical guide to treatment would therefore vastly increase the sum of human misery, and would inevitably condemn many to certain and speedy death. This fundamental axiom of homœopathy also excludes the employment of all *material* doses of any remedy whatever, and accounts for the improper or want of action of any remedy by its being insufficiently dynamised, or incorrectly chosen. If the remedy be correctly chosen but imperfectly dynamised, we are told to expect the development, not simply of its remedial action, but of a medicinal aggravation to boot ; but this, on the other hand, has been denied by many homœopaths.

\* I quote the very words of one of the most learned homœopaths, Dr. Müller (vide *Æster. Zeitschrift f. Hom.* bd. i. hft. 3, p. 13).



Kopp (*op. cit.* p. 125) says that medicinal aggravation—or what has been supposed to be such—has been often observed to follow the administration of a very small (infinitesimal) dose, while it has not been seen to follow the employment of a larger dose in the same case; in short, has not been found to have any direct relationship to the dose. Dr. Drysdale (*British Journal of Homœopathy*, No. 1, p. 39) makes precisely the same remark *apropos* of a case quoted in which apparent medicinal aggravation had followed the use of a minute (infinitesimal) dose; and yet, after “a second dose, in quantity a thousand times greater than the first, not the least exacerbation was produced, but merely a rapid and permanent amelioration.” Dr. Georg Schmid\* also, formerly physician to the Homœopathic Hospital at Vienna (Gumpendorf), laughs at the idea of medicinal aggravation (p. 250), denies the dynamisation of the drugs, and believes that even homœopathically-chosen remedies “ought to be given in *such quantities as suffice* to produce their curative results.” For these defections from its original principles, as laid down by Hahnemann, he has, however, been arraigned at the bar of homœopathy, and dismissed with the brand of heretic;† and in truth this is no unimportant matter, for if medicinal aggravation be in any one case a delusion, what proof can we possibly have that it is not so in all? and how are we to recognise when the medicinal aggravation is real and when only apparent, seeing that it so closely resembles the merely natural increase of the intensity of the disease as to be very readily mistaken for it? (*Organon*, sec. 151.) In the one case, of course, diminution of the dose is most necessary, because, if the organism be in danger from the original disease, that danger must be more than doubled when to that original disease is superadded a medicinal disease of precisely simi-

\* *Homöopathische Arzneibereitung und Gabengrösse*, Wien 1846.

† “Was ist Homœopathie? oder Dr. Georg Schmid vor dem Ähnlichkeits gesetzte,” von Dr. Böhm (*Ester. Journal f. Hom.* bd. iii. lft. 2, p. 383).

lar character and of greater intensity. On the other hand, if the increased intensity of the disease arise merely from its pursuing an unchecked course, the dose must be either insufficient or the remedy ill-chosen. Dangers, therefore, threaten the patient on every hand—*incidit in Scyllam qui vult vitare Charybdin*—and the means of escape lie only in the happy guess of the physician. Where, then, is the boasted certainty and safety of homœopathy? The cases in the following report, if carefully criticised, will show that practically no attention is paid to this so important fact (if true), and that the only use of the doctrine of medicinal aggravation is “to point a moral,” as I have been attempting to do, or “to adorn a tale,” as it is most admirably made to do in Dr. Henderson’s work (*op. cit.* p. 239, etc.) Dr. Henderson states that “diseases render the body so sensitive to the action of medicines, that quantities of them, minute beyond conception, are liable to produce *aggravation of the diseased states*, to which the medicines employed have a homœopathic relation;” and of this his *first example* is that of a married woman cured of hæmaturia by the  $\frac{1}{12}$ th of a drop of turpentine every four hours. “In twenty-four hours the sanguineous appearance was quite gone, but much irritability of the *vesica*, pains in the region of the kidneys, and shootings from that region down the limbs, made their appearance.” Now, I have no hesitation in saying that it is not uncommon to find symptoms of irritability of the bladder, and pain in the region of the kidneys shooting down the limbs, either accompanying or succeeding hæmaturia; and for this reason I have just as little hesitation in denying this to be a case of medicinal aggravation. The fact that some weeks after the same woman was cured of a similar attack by a smaller dose of turpentine ( $\frac{1}{100}$ th of a drop) in a longer time without any “painful consequences” is no proof either way. Five days was quite a reasonable time for hæmaturia from “indiscretions in diet” to get well of itself, and irritability of the bladder is not a constant concomitant of this complaint. Moreover, turpentine has

been often given in similar cases in much larger doses (5 to 10 drops) without any result beyond the safe and pleasant cure of the complaint.

In his *second example* there was, according to his own statement, no aggravation of the "diseased state," but such a well-marked development of the physiological action of the remedy (strychnia) that it was readily recognised by the ordinary medical attendant. This, then, was no medicinal aggravation, but simply a case of poisoning from overdose ; while I may perhaps be permitted to doubt the possibility of its having arisen from merely the millionth of a drop of tincture of *nux vomica*, even though continued for "four days !"

The *third example* is also the result of overdose, not the medicinal aggravation of the disease—a swelling over the nose, no aggravation of which could possibly produce mercurial stomatitis—but simply the development of mercurial action from "soluble mercury in its sixth dilution" administered every four hours !

The *fourth example* is that of an old gentleman, with a skin disease of many years duration, who took one dose of the thirtieth attenuation of *sepia*, after which no aggravation of the disease was observed, but he became so faint and exhausted as to require stimulants. The medicine was stopped never to be resumed ; nevertheless a sensible amendment was observed in the limbs within a week, and this ultimately went on to a perfect cure. I deny that this is a case of medicinal aggravation at all ; there is no proof of it whatever. Faintness and exhaustion are no aggravations of a scaly eruption on the legs, neither are they very uncommon occurrences in old gentlemen of seventy-five, even though they have not taken a dose of *sepia*. Further, it is no uncommon thing to find diseases even of obstinate character and long standing suddenly take their departure without, as in this case, there being any very evident cause for it. One of the most remarkable cases of this kind which occurred to myself was that of a man

labouring under an asthmatic affection of long standing and great severity, who had been under many physicians, and among the rest the late Dr. Alison. In passing his house one day I paid him a visit, and made a careful examination of his chest with the stethoscope. Some time after I was surprised to learn that he fancied himself much the better of what I had done to him. From that time forth he made a gradual and ultimately a perfect recovery ; and though it is now many years since, he has never had a relapse of his former complaint ; so I think I may safely back my stethoscope against any infinitesimal of the lot for safety and certainty of cure. A whole host of such cases are related by Dr. Simpson in his *Homœopathy: its Tenets and its Tendencies* (p. 84, etc.)

These cases of Henderson, therefore, do not prove the possibility of medicinal aggravation of *the disease*, not one of them being instances of that ; and if they can be held to prove anything at all, it is that the remedies he employs are employed in material doses, and act by virtue of their physiological actions ; but Böhm has said that “ the smallness of the dose alone does not stamp the cure as homœopathic, because drops and globules are just as capable of producing physiological actions as bottles and powders ; but cures obtained by means of the physiological action of a drug, however minute the dose given, are not homœopathic cures.”\* I am justified, therefore, in stating that Dr. Henderson does not “ fairly represent” the homœopathy of Kopp, of Drysdale, and of Dr. Georg Schmid, and all who, with them, disbelieve in such a thing as medicinal aggravation ; neither does he “ fairly represent” the homœopathy of Hahnemann, of Müller, of Böhm, of Fleischmann, and the rest of the Vienna school ; because it is evident, from these cases of so-called medicinal aggravation, that his drugs are employed in material doses, and act by virtue of their physiological properties ; because he denies the truth of the dynamisation of remedies (p. 236), avows his pre-

\* *Op. cit.* p. 392.

ference for the smallest *material* dose capable of producing the desired effect (in which all wise physicians agree with him), and declares that the sole difference between homœopathists and allopathists, as respects the dose, is merely one of fractions of grains against fractions of grains (p. 244). All this being contrary to the doctrines of Hahnemann as laid down in the *Organon* (*loc. cit.*), contrary to these doctrines as explained in Böhm's admirable critique already referred to, and expressly contradictory of what Müller has declared to be an "axiom" in homœopathy "*Zwei episteln über Principien und Gabenhader*" (*loc. cit.* App. p. 244) ; the only homœopathy, therefore, which Dr. Henderson "fairly represents" is his own, and the only thing in which it agrees with Hahnemann's is in the selection of the remedies according to the principle of "*similia similibus*."

But this principle of selection, though at first implicitly relied upon, was subsequently found to be only useful in acute diseases, because Hahnemann thought proper to imagine that all chronic diseases were dependent upon one of three latent poisons—syphilis, sycoosis, or psora ; so much so, that while in the first six volumes of the *Homœopathic Archives* all chronic diseases are declared to be easily and durably cured by ordinary (homœopathic) remedies, in the seventh and all subsequent volumes all chronic diseases are stated to be only curable by anti-syphilitics, antisycotics, or antipsorics, to the exclusion of all other remedies, however "similar" the symptoms produced by them may be.\* Dr. Henderson's homœopathy has therefore but a very slender connection with that of Hahnemann, and affords only another instance of the truth of the assertion which I made eighteen years ago, that there is "confusion and war in the very camp" of the homœopathists ; while I believe as firmly now as then that while "physicians have, to a certain extent, been deceiving themselves for years—centuries, shall I

\* Hahnemann's *Chronische Krankheiten* ; and Kopp, *op. cit.* pp. 352, 387, etc.

say ?—as to the efficacy of many drugs, have been masking symptoms by heroic treatment, and often falsely believing they were thereby curing disease ; I believe, at the same time, that homœopathists are now deceiving themselves infinitely more—are allowing Nature to kill or cure as she pleases—are walking up to the first part of Chomel's golden axiom (which, by the way, is of far older date than Chomel) that ' the first law of therapeutics is not to do harm, and turning their backs on the equally important second law, which commands them ' to do good,' and which, so long as they remain homœopathists, in the present or even in any sense of the word, they are for ever shut out from doing."\*

My report on the treatment of disease in Dr. Fleischmann's hospital, Vienna, which was originally published in the *British and Foreign Medical Review* for October 1846, was printed during my absence from this country ; a few *errata* consequently crept in, and it is now for the first time produced in a corrected form. In the review of this report which appeared in the *British Journal of Homœopathy* for January 1847, Case VI. of the pneumonic cases is objected to as not being a case of pneumonia at all. As corrected (and the correction was published by me in the *British and Foreign Medical Review* for April 1847, p. 611), no one, I think, can refuse assent to its having been a case of true pneumonia. Moreover, *all the cases of pneumonia related by me* had the diagnosis "*Pneumonia*" written in chalk on the board at the head of each patient's bed by Fleischmann himself, for I saw him do it in each case. In that review I am also stated not merely to confine myself to an expression of my opinion, but to profess "to establish facts which, if established, would certainly tend to throw considerable doubt on the truth of Dr. Fleischmann's statements." I regret to say that I subsequently† had occasion to establish these facts still more

\* *British and Foreign Medical Review*, April 1847, pp. 610, 611.

† *Edin. Med. Jour.* Feb. 1848, p. 624.



clearly and unmistakably. For, so soon as I could procure a copy of the *Æster. Zeitschrift f. Hom.* bd. iii. hft. 3, containing a report by Dr. Fleischmann of the statistics of the Gumpendorf Hospital, I proceeded to collate them with those contained in my report, with the following result :—

1st, *Pneumonia*.—Of the nineteen cases detailed by me three died ; two were dissected, the third not, at least not in my presence. Of nineteen, therefore, admitted in three months, three died—15 per cent ; while, according to Fleischmann's report, of sixty-four admitted during twelve months, but *two died*—3 per cent.

2d, *Intermittent Fever*.—All the cases are reported as discharged cured, except two dead. At p. 272 of this appendix one case is mentioned as having been discharged not only unimproved, but actually worse, and that case I well remember.

3d, *Ophthalmia*.—One case (p. 302) was not to be seen the second day\* after her admission. Was she cured of acute catarrhal ophthalmia in less than forty-eight hours, not having been at all relieved when last seen ? All the three cases reported by Dr. F. are stated to have been cured, except one remaining. I have also reported (pp. 302, 303) one case of *general dropsy* and two of *pleuritic exudation* as having been discharged, the one but slightly, the others not at all improved. Under these heads all are reported cured by Dr. F., except one case of general dropsy, dead.

I received much kindness from Dr. Fleischmann during my attendance at the Gumpendorf Hospital (on the books of which, by the way, though I only reported for three months, my name is borne for a longer time than that of any other English student who preceded me, while my report itself speaks for the regularity of my

\* In my report it is stated "the following day." On referring to my papers I find that she had been admitted after the visit on July 31st, and discharged previous to that on August 2d ; so that she was only once seen by me.



attendance) ;\* and I trust he may be able to explain the discrepancies between his published statistics and my own actual observations. But, be that as it may, the actual facts justify me in declaring it to be my explicit opinion that the published statistics of that hospital are wholly untrustworthy, and not worth the paper they are printed on. I still possess the notes written in the hospital, with the extended reports of the cases thought worthy of being written out, tables of all the cases observed by me, and tables of all the cases of intermittents observed, with the number of attacks of fever carefully noted in each case—all written on unmistakably Austrian paper, and distinctly proving that these charges are no afterthought of mine, but the undeniable result of actual discrepancies between the cases as observed and the published statistics. In testimony of this I append the initials, number of the bed, and dates of admission and discharge of four of these cases.

*Pneumonia*.—Case VI., A. T., Male Ward, Bed No. 13 ; admitted May 21st, 1846 ; died on May 23d.

*Intermittent Fever*.—A. F., Male Ward, Bed No. 8 ; admitted May 21st ; discharged June 8th, at his own earnest entreaty—the fever, from a tertian, having become quotidian.

*Ophthalmia*.—T. G., Female Ward, Bed No. 21 ; admitted on the afternoon of July 31st ; discharged August 2d, unimproved when last seen on August 1st.

*Pleuritic Exudation*.—F. H., Male Ward, Bed No. 27 ; admitted May 19th ; discharged June 21st. Applied next day for re-admission and was refused.

\* I merely mention this because in the review referred to several medical men (homœopathists) are mentioned as having studied the subject longer in Vienna than I did, which is, to say the least of it, a mistake.

REPORT ON THE HOMŒOPATHIC TREATMENT OF ACUTE  
DISEASES IN DR. FLEISCHMANN'S HOSPITAL, VIENNA,  
DURING THE MONTHS OF MAY, JUNE, AND JULY, 1846.

BY GEORGE W. BALFOUR, M.D., EDIN.

(*In a Letter to Dr. Forbes.*)

VIENNA, August 14, 1846.

MY DEAR SIR,—I shall now proceed to lay before you the results of my inquiry into the practice of homœopathy, prefacing them with a short account of its present state in Germany, where it is now become quite fashionable, and nowhere more so than in Austria. Even travelling physicians are now chiefly chosen from among its followers, who are consequently far from being insignificant in numbers. No young physician settling in Austria, excluding government officers, can hope to make his bread, unless at least prepared to treat homœopathically, if requested; and many, after attempting to do so, return to Vienna to make themselves acquainted with this new method. Many older men also attempt, by thus conforming to the foible of the day, to recruit a failing practice. Thus homœopathy is studied, not for any beauty or truth to be found in its doctrines, but from necessity, for a livelihood. Many continue to practise both methods, not eclectically, but according to the wish of the patient, believing in neither, leaving inquiry to others, and stumbling blindly on. Others, confident in homœopathy, merely use ordinary medicine, or, as it termed, allopathy, in so far as occasionally to give a laxative, or, where the relatives urge it, to bleed—all by way of *placebo*; and I believe there are few, except the older and better established practitioners, who would not give such a *placebo* if requested. Nay, the enclosed recipe will show that even they are not altogether

free from blame in this respect, or else that they have found their guiding principle in many cases false. The gentleman who gave me it (an allopathic physician) told me he might have procured many such.

While thus, from force of circumstances, everywhere increasing their domains, homœopathists are far from sitting idly down, content in following the footsteps of their first great master. Imbued with the progressive spirit of the age, they also strive after improvement, and while professing to retain "*similia similibus*" as their fundamental principle, are endeavouring to advance their method, and give it a more permanent and dogmatic character. Seeing, as it would seem, that the above-mentioned principle does not suffice for every case, they change the name of homœopathy to *Specific Medicine*. These men are dissatisfied with Hahnemann's work on the *Materia Medica*, on account of the imperfect nature of the observations, and look upon it as an enormous and almost unreadable catalogue of symptoms, more fitted for the memory than the intellect, and thus not only rendering the practice of homœopathy more difficult for his own followers, but throwing an almost insurmountable obstacle in the way of physicians who think otherwise, and often preventing those very intellects best fitted to become leaders in the reformed practice from ever studying it (*Österreichische Zeitschrift für Homöopathie*, 1 Band, 1 hft. pp. 4, 5). Accordingly they have commenced a careful re-proving of all the medicines, with the view of obtaining, not a mere catalogue of symptoms, but a collection of medicinal diseases. A journal (the above-quoted) is also published in Vienna with the view of giving publicity to these provings. This shows them to be in earnest in their endeavours to simplify their method and render it more practicable—certainly necessary, as any one will be more inclined to confess, after having looked into *Jahr's Codex*, the best of the day. Who can wonder at the difficulty experienced by homœopathists in choosing their remedies, when we find the same symptoms repeated, it may be, in

a somewhat different order, under the head of almost each separate medicine? Nay, Isensee (*Geschichte der Medicin*, vol. vi. p. 1569) goes so far as to say, that in no case are the peculiar and characteristic operations of a medicine to be found, except in such cases as Hahnemann has, from want of original observation, borrowed from the allopaths; and that his own symptoms may all be referred to sobriety, fasting, ill-humour, and sleepiness, caused by continued attention to—*nothing*, mixed with those innumerable sensations which crowd every hour of our life!

Among those who are guided by the same principle in their choice of a remedy the dose in which this ought to be given has formed, and is forming, a fruitful source of internal contention. Many, amongst whom may be reckoned Fleischmann and most of the Vienna homœopaths, employ the modern formula of 10 : 90 in making their dilutions, and seldom go higher than the 3d or 4th perhaps, and more rarely the 6th. Others, contending that those dilutions are too low and apt to produce disagreeable consequences, employ from the 14th to the 30th; while yet others, outstripping Hahnemann himself in their idea of the effect of friction and shaking in developing the latent powers of remedies, contend that these are at first produced too powerfully and irrestrainably, and, when employed in those low dilutions, only render the disease worse, without in the least tending to cure; but that by being further diluted (*potenziren* is the technical term) the agent at length arrives at that pitch at which, according to their ideas, the whole remedial power is developed, but so mild and tractable that it at once cures without producing any exacerbation (*verschlimmerung*), and is therefore—and then alone—entitled to our confidence and the name of remedy. The champion of this sect is Dr. Grosse, a practising physician at Jutterbock, whose usual dilutions are 200, 400, 800, and 900; and he often contents himself with allowing the patients to smell the remedy—whether one or more globules at one time I am not aware—waiting

patiently for four weeks or so for the completion of the cure, not even permitting a second smell ; so mild, yet certain, is the remedial action ! This method, however, does not pass current with the homœopaths generally ; it is rather too finely drawn for even their sensitive imaginations. A paper by Dr. Grosse, urging the importance of this mode, and accompanied with cases to prove its advantages, was published in the 21st volume of the *Homœopathic Archives*, and has been criticised in a late number of the *Austrian Homœopathic Journal* by Dr. Böhm, a practising homœopathic physician in Vienna, and his cases in proof set aside on the grounds—*1st*, That in those cases in which a cure seems best made out lower powers produce equally good results—hence an immense saving of time to the physician ; *2d*, That many cases recorded as cures seem to be merely a longer than usual intermission between paroxysms, which may, nay often does occur, without any previous treatment ; *3d*, That many others were merely the natural result of the lapse of time—*e.g.* a severe pain in the foot, which took its departure four weeks after smelling phosphor. 200 ; *4th*, In others the diagnosis seems to have been incorrect, and the credit due to Nature given to the remedy. Dr. Fleischmann also, in a note, says with respect to this mode : “ Are the results true ? I grieve that truth appears so decked in folly’s garb as to drive many from her in disgust. Are they imaginary ? I grieve again that spectres arise before which the soberest must retire in fright.”\*

This Dr. Grosse seems but the pioneer for newer and bolder discoveries in this vast and unknown field ; for another writer speaks of arsenic 2000. What would Dr. Alexander Wood say to this, if 30 proved too much for

\* Might not all this be with equal truth applied to homœopathy generally ? It is to be wished that common homœopaths would as carefully criticise their own cases, and cease to imagine that “ quia post, non propter ” refers only to allopathie and high-power cases.—G. W. B.

his weak faith and still feebler imagination? At this rate the dilutions of one remedy alone would, with the requisite utensils, form no inconsiderable laboratory, and their preparation consume no trifling portion of valuable time, not to speak of the innumerable trials necessary to be made, in order to find out in which dilution, from  $\cdot 1$  to  $\cdot 2000$ , the remedial powers of the agent are most fully and usefully developed. Verily, *ars longa, vita brevis*.

There is still another sect, or at least an individual, in Vienna—Dr. Georg Schmid—who has within the last few months given to the world a volume, as the result of many years' experience in homœopathic practice, with respect to the preparation of medicines and the amount of the dose (*Ueber die Arzneibereitung und Gabengrösse*, Wien 1846). The latter portion of the work possesses peculiar interest, inasmuch as the author contends, from personal experience, that the present small doses are worse than useless, and that the mother tincture, one drop for a dose, or larger doses than usual of the first or second triturations (*verreibungen*) ought to be employed. These triturations he employs not because he considers that remedial power or new chemical properties—as solubility—are thereby imparted, but because the medicine, being thus divided into its finest atoms, and each particle thus brought into immediate contact with the organism, is better enabled to exert its remedial agency. He adds (p. 60), that by using this means of division we have not an absolute increase of power, but rather, with the diminished mass, a diminution of it. So long as the smallest trace of the remedy is perceptible so long can we understand that such a dilution may be efficacious; but when the medicine is neither to be recognised by chemical nor physical means, and probably never shall be, how is its efficacy to be explained? His remarks upon homœopathic exacerbation deserve to be carefully read by every homœopath. He states that Hahnemann, in his preface to his work on Chronic Diseases, says that nothing worse could happen than that the small doses did



not *help*, for *hurt* they could not. "Is it not," asks Schmid, "the duty of a physician to be of positive use to his patient—that is, to help? To do this he must use the proper remedies in the proper doses. But he can also injure, therefore medicine is no child's play, but the life-task of the physician; and he who feels not the power and the courage to discharge this duty ought to choose some other profession. As there is no means of distinguishing the medicinal disease from the real, so the physician may ascribe an exacerbation which arose after taking his physic to this cause, though it may be totally unconnected with it, and by then diminishing the dose may allow this exacerbation to proceed unchecked. How often has not this already happened! Indeed it would not be difficult to discover amongst the many published cases of so-called medicinal exacerbation merely the progressive increase of the disease, over which the medicine had not the slightest influence, being either of the wrong substance or deficient in quantity; yet the physician has reduced the dose, giving over his patient to nature, it may be to death" (pp. 227, etc.)

Dr. Schmid even turns Hahnemann against himself, showing that of the only four of his cases which have been published, two having been treated with the mother tincture, and two with various dilutions, the first two alone are entitled to the name of cures. Again, Hahnemann, after quoting allopathic cases in favour of his principle, adds, "large doses, though dangerous, often cure without peculiar disadvantages" (*Organon*, 4 Aufl. pp. 54-104). Finally, Rau—though his work be no longer new—may be quoted as constituting one step towards the formation of an eclectic school; and doubtless his remarks have afforded much comfort to those homœopaths who have been led astray by interest. He acknowledges that there is much good in the old school—nay, that "an antipathical practice may indeed be thought of" (*Organon der Specifischen Heilkunst*, pp. 45, 46). He goes on to say that



venesection, derivative and repulsive remedies, may all at times be useful ; and quotes cases from his own practice illustrating the fact that symptoms not to be relieved by homœopathic remedies will often yield at once to purges, or emetics.

The Homœopathic Hospital of Vienna is a private one in the convent of the Sisters of Charity : it was erected by them in the first instance, with the view of thereby obtaining practical instruction in what constitutes their chief object—the cure of the sick. They have also another smaller hospital in a sister convent in the suburb Leopoldstadt. The homœopathic hospital is situated south-west of the city, in the suburb Gumpendorf, near the lines, much farther from the town than the General Hospital, and upon a loftier and airier situation ; the latter being situated on the banks of the brook Alser, which has, within the last year or two, been covered over. The homœopathic hospital is also less than the other, containing only 50 beds—25 for males, and 25 for females—divided amongst four well-lighted and well-aired rooms. A few cribs for children are also occasionally occupied.

From its opening in July 1832 till July 1833 Dr. Mayerhoffer was its medical attendant. During the early part of this period the cholera was ravaging Vienna ; and during the prevalence of this disease Dr. Mayerhoff established his confidence in homœopathy. After him came the above-mentioned Dr. Schmid, who treated the patients, indeed, according to the homœopathic principle, but not with the wonted small doses. He continued till January 1835, at which time Dr. Fleischmann commenced those duties which he still continues to discharge, and whose name, in connection with homœopathy and this hospital, is now known over both the old and new worlds ; and from whom the practice of homœopathy has received a greater impulse than from any other since the days of Hahnemann. During the first appearance of cholera here the practice of homœopathy was first introduced ; and cholera,

when it came again, renewed the favourable impulse previously given, as it was through Dr. Fleischmann's successful treatment of this disease that the restrictive laws were removed, and homœopathists obtained leave to practise and dispense medicines in Austria. Since that time their number has increased more than threefold in Vienna and its provinces.

The medicines employed in this hospital are all prepared in it by lady-apothecaries (apothekerinnen), who for this purpose receive a special education, and undergo an examination. None of the drugs are obtained from allopathic apothecaries ; or if so, are carefully tested and purified. The tinctures are either made in the hospital or obtained from those homœopathic physicians who reside where the plants are indigenous. The text-book for the preparation of the tinctures and dilutions is Gruner's *Homœopathic Pharmacopœia*. Gruner employs the proportions of 10 to 90 in making the latter, or 5 to 95 in the case of such salts, oils, etc., as are not soluble in the above proportion. This dilution is not marked 1, but fractionally, and a double portion, 20 : 80, taken to form the second dilution, so as to bring it again into the proper relative proportion. Hahnemann's empirical rules as to rubbings, scrapings, and shakings are discarded. The time employed for the first two is regulated by the relative hardness and adhesiveness of the material ; and in making the dilutions the shakings are continued only till the whole is clearly dissolved ; when the dilutions are commenced by trituration with sugar of milk, three such are made, and one part of the third added to nine of distilled water to make the fourth. The fifth dilution is made by the addition of one part of the fourth to nine of watered spirit—*i.e.* spirit containing 70 per cent alcohol, mixed with an equal quantity of water ; and the further dilutions are continued with this spirit. The temperature recommended is 12° to 15° R. The medicines are administered to the patients either in powder or solution, according to the frequency with which

they are to be given. For the first method a drop of the solution, or a grain of the trituration directed, is mixed with a small quantity of sugar of milk for each dose ; for the latter a small bottleful of water is taken, and the trituration dissolved, or the solution dropped into it in the proportion of two grains or two drops to each ounce, half an ounce being the dose. Those for whom no medicine is considered requisite get a powder of sugar of milk, or something of that kind. Where two medicines are ordered they are given alternately at intervals of two or three hours. The diet is light and simple ; no coffee, tea, or wine is allowed ; the latter, however, is sometimes given in cases of old people, or in convalescence from severe disease, if thought requisite. In acute diseases a light soup is given three times a day, exchanged, on commencing recovery, for a more nourishing one (*eingekochte suppe*), and the diet so progressively improved. No food is allowed to be given during treatment in which acid is predominant.

In taking into consideration the adjuvants to treatment, the religious character of the establishment must not be forgotten. The greater part of the patients are Roman Catholics. These find themselves surrounded by all the consolations of religion—by everything which, in their opinion, tends to ensure, in the event of death, a speedy passage of the soul to the realms of bliss. Their minds, thus set at ease with respect to futurity, are less gloomy and desponding, and consequently react less unfavourably upon the body than in the opposite circumstances. Nay, looking upon their nurses as self-devoted in the service of heaven and of suffering humanity, they cannot but believe that the blessing of the Almighty will rest upon their labours ; and being the object of those labours, they naturally enough appropriate a portion of this blessing to themselves, and imagine that their recovery can hardly fail to be promoted by their being the inmates of such an institution. In support of this opinion I may state that, although most of the patients were young, and many

dangerously ill, I never heard one expression indicative of a fear of death, nor one murmur, however slight, unless extorted by the extremest pain, and even then it was more an aspiration after relief than a grieving at suffering. The severer the disease the more closely do they grasp their rosaries and crucifixes. So long as they are able to read prayer-books are constantly in their hands, and even in the intervals of delirium—nay often, in the case of women especially, during delirium itself—the exercise of repeating prayers, or snatches of them, is their occupation. The superiority of attendance is also one great advantage in favour of this hospital, independently of the important fact just stated, that the nurses are spiritual as well as temporal comforters. It may not be inappropriate to state here also—more particularly as I shall have occasion to compare the results of the homœopathic treatment with those observed in an ordinary hospital—that in Dr. Fleischmann's institution the pneumonic patients are *not* ausculted and percussed, and unceremoniously lectured over several times a day, as is the case in the General Hospital. This difference will not appear a matter of indifference to any one who has witnessed the proceedings in the two instances.

The comparative youth of the patients in this hospital must also be taken into consideration. This is at a glance evident to the visitor, and will be rendered so to you when I state that of 320 patients I have seen treated there during three months, 31 were under 15 years, 90 under 20, 80 under 25, 44 under 30, 22 under 35, 13 under 40, and above 40 were 22, of whom 13 were under 50, 5 under 60, and the remaining 4 were aged as follows—1 of 70, 1 of 73, 1 of 76, and 1 of 95 (the latter died of old age); consequently, above one-third of the whole number were under 20 years, and considerably more than one-half under 25 years. This circumstance of comparative youth, under all kinds of treatment, has an immense influence upon the ultimate result.

Again, the patients are admitted and discharged by the

physician, without any control, so that, to say the least, it requires a man to be very conscientious to decide impartially between temporary improvement and perfect cure, especially when he recollects that the fate of his creed and his institution may depend upon the nature of his returns to government. These returns are made monthly, with a yearly *resumé*.

Some of the following cases will be found to have been discharged too early to enable us to be positive as to the ultimate result. Again, these cases, or others discharged apparently cured, may apply for readmission, and be, under some pretext or other, refused ; while, to disarm suspicion, a few whose relapses seem more manageable may be readmitted. Such may not be the case in point of fact, still it is very possible. I have seen at least one patient refused admittance, and that, too, the very day after his discharge, without any good obvious reason. It was a boy, with effusion into the right pleura following scarlatina, which he had gone through at home. There was also a general anasarca state of the body, which speedily disappeared, but the chief complaint remained obstinate, and after 33 days' treatment with bryonia, the second dilution, four times daily, he was dismissed but slightly improved. This boy was denied admission when he applied the following day on account of return of pain in the chest, not certainly for want of room, as his bed was empty for days afterwards. This is not the only effusion into the chest which has been dismissed unimproved during the period of my observations ; yet this scarcely agrees with Dr. Fleischmann's returns, as out of 12 with exudation in the pleura, occurring during 10 years, he has, he says, cured all but three, who died. And a physician of the General Hospital has assured me that many such cases dismissed by Dr. Fleischmann, and subsequently refused admission, have applied to him for relief, which relief they have obtained by the use of purgatives and baths. Then again, there are, I may say, hundreds of

trifling cases admitted here which would not have been admitted into any hospital in England. Many of the patients get no medicine ; a few a single dose ; and even of comparatively trifling cases many remain for weeks, nay months, in the hospital ; while more acute or more interesting cases are hurried out too often with the cure incomplete.

Dr. Fleischmann's usual number of drugs is not very extensive, one drug serving for a great many diseases, but chiefly because the diseases principally consist of a few standard ones constantly repeated. Gastricismus, typhus, and pneumonia are the chief ; and in treating these he employs almost always the same remedies, only varying when some one unusual symptom is very predominant. This uniformity is a cause of complaint from his fellow-practitioners, who say that "by seeing his practice you merely get a glimpse of what homœopathy can do ; as Dr. Fleischmann, satisfied that his returns are superior to those of any allopathic hospital, gives himself no trouble in trying to suit the remedy to the disease, but is content if occasionally the disease suits the remedy—when it produces those miraculous effects which are the boast of homœopathy."

This may be so : yet it strikes me as being something extraordinary that those cases in which such miraculous effects have been produced have always been cases of some standing, either ill-treated or not previously treated at all, the homœopath having come in with his dilutions at the lucky moment when Nature was going to relieve herself. This always puts me in mind of the Irish proverb, "The hour that is darkest is the hour before day." Things could not be worse ; they might, and luckily do improve ; and the homœopath gets the credit of it. The case is then published as one of the triumphs of homœopathy, whilst the many similar cases where even homœopathic treatment has proved unavailing are silently passed over, or recorded as instances of the imperfection of the human intellect : the wrong remedy must have been chosen !



Dr. Fleischmann also uses cold applications to the head in delirium, sometimes in headache, and cold washing of the body in fevers ; in arthritis, cloths dipped in cold water, and surrounded by oil-silk, are wrapped over the affected joints, and allowed to remain so long as they are damp, and are then reapplied. He also uses for costiveness clysters of plain warm water or mixed with a little salt. In diarrhœa rice-water clysters are employed. He told me that neither he nor any rational homœopath ever employed emetics or purgatives, however simple ; yet I heard his assistant once order a woman to get a spoonful of oil.

The number of students allowed to attend the hospital is limited by the spiritual powers, on account of the nuns. They attend generally in the morning ; but during a part of my visit several attended in the afternoon, the number in the morning being full.

The whole process of the admission and discharge of patients is mysterious. Still so much is certain, that most of those admitted have been previously visited at their own houses by the assistant. Many cases not improving, or apparently not likely to improve, are got rid of very summarily. During most of the time I visited in the morning along with Dr. Fleischmann, and latterly, for some weeks, in the afternoon along with his assistant, it not being then permitted to visit in the morning. I was told the cause of this restriction was that the students might have an opportunity of taking a course from the assistant.

I feel convinced that the secret of Dr. Fleischmann's great seeming success lies in the fact of the admissions and dismissions being entirely uncontrolled, and there being no check on the diagnosis. Rarely other than well-marked cases have their diagnosis written on the board at their bed-head, the others being left blank, and entered in his book, of course as he pleases.

I have visited the hospital from the 21st of March till the 5th of August daily, except for a short time at first, when I was not in very good health ; but I only give you



the details of the three months, May, June, and July ; as at first I was not sure how I could best conform to your wishes. Three months' regular observations are better than desultory observations extending over a longer period. I have not been able to do all that might have been desired ; still I think enough has been done to enable you to judge fairly of the state of things. The patients are in general so stupid that it is not easy even for a native to obtain the requisite particulars from them ; of course it is much more difficult for a foreigner. And as to previous history, they are totally unaccustomed to recollect or relate anything of the kind. If they have been previously ill, they can seldom tell you how or by whom they have been treated. The restraint belonging to the nature of the institution prevented even Dr. Fleischmann from making that examination which, in general or allopathic practice at least, would have been thought requisite. Of course I could do no more ; I have, however, done my best to discharge my task faithfully and impartially ; and in laying the following statements before you I may say with Störk—" *Non hypotheses condo, non opiniones vendito, quod vidi scripsi.*"

#### TYPHUS FEVER.\*

During the months of May, June, and July, there were treated 32 typhus patients. Four of these still remain under treatment ; and, excluding these, six died, giving a mortality of 21·4 per cent. The average age was 21·5.

Under Skoda, in the General Hospital, during the same period, there were 76 typhus patients treated, of whom 15 still remain ; 19 of those died, giving a mortality of 31 per cent. The average age was 26·4. Of these patients, however, there were, as I know from actual observation, fewer trivial cases. Skoda's treatment consists in giving acids (mineral), in doses of  $\mathfrak{Dj}$ . or  $\mathfrak{ss}$ . daily ; extract. graminis, or any other equally innocuous extract, by way

\* Typhus abdominalis, or enteric fever.

of *placebo* for the patient ; and where the diarrhœa is violent he employs tincture of opium to moderate it, generally in much the same dose as the acids. The following notes, carefully taken at the time, will give you some idea of the homœopathic cases and their treatment by Dr. Fleischmann.

CASE I.—J. A., a stout young woman, admitted Tuesday, April 27. Next day, at the visit, stated that for fourteen days past she had been suffering under daily attacks of cold followed by heat ; resting, however, well by night. (*Ipecac. third dilution, four times daily.*) On Friday last she was seized with vomiting, which lasted some time ; bowels have not been opened for the last eight days ; the pulse is accelerated ; the tongue coated and dry ; skin hot and dry ; pain on pressing the abdomen. *May 1st.*—The tongue cracked and bleeding. *2d.*—One stool ; was restless and wandering during the night ; sleeping quietly at the time of the visit ; cheeks flushed and eyes sparkling ; tongue covered with dry brown scales. *4th.*—The pain in abdomen is to-day more violent and aggravated by the slightest pressure. *5th.*—Bowels opened three times ; skin cooler. *6th.*—Bowels opened eight times ; thirst great ; sleeps but little ; wandering a little at night ; the tongue is clearing and moist ; the pulse less feverish. *7th.*—Bowels opened three times ; slept better last night ; coughs a little to-day, and expectorates a quantity of dull ill-coloured mucus streaked with blood ; percussion-sound is good, but sonorous râles are audible over the chest. *8th.*—Bowels opened six times ; abdomen slightly tympanitic. *9th.*—Her appearance is to-day more lively and sensible ; the pain in abdomen better ; the diarrhœa ceased ; tongue moist. *12th.*—The tongue is again dry and covered with brown scales ; bowels not opened for three days ; the pulse, however, remains quiet, the skin cool ; expectoration continues. *15th.*—The pain in the abdomen is entirely gone ; bowels open to-day. *17th.*—On account of difficult expectoration she got *senega, the second dilution*, to be given alternately with the former medicine

which she got on the 28th of April—viz. ipecacuanha, the third dilution, four times daily. 19th.—She is to-day bathed in perspiration; the pulse quiet; expectoration easy, and tongue again moist and clearing. 24th.—Her cough is now much less troublesome. 26th.—Her appetite has returned; the expectoration is much less copious, and more easily brought up. 28th.—The ipecacuanha stopped, and the cough and expectoration having entirely ceased on the 18th of June, the senega was also stopped. On the 19th of June she was seized with a rheumatic attack in her ankles, which confined her to bed for a few days, after which she continued daily to improve; but was not discharged till the 26th of July.

CASE II.—M. M., a delicate-looking woman, aged 35, admitted on Thursday, April 30th. Complained at visit next day of rigors followed by heat, which together last from six to ten every evening, and have occurred daily for the last three days; they are followed by wakefulness, which lasts till the morning, when she has a little broken slumber; there is constant headache and bitter taste in the mouth; tongue coated; bowels open every third day; no appetite; slight pain in abdomen on pressure. (*Bryonia*, third dilution, four times daily.) The rigors left her; the fever increased somewhat, the tongue drying; otherwise her state was unchanged till May 9th, when she was covered with sudamina, having perspired a good deal during the night; the tongue moist and clearing; but on the 13th it was again dry, covered with brown scales; diarrhœa set in, the bowels having been twice opened, and continued more or less for three or four days. On the 20th a slight cough came on, with mucous expectoration; this was gone by the 25th. The medicine stopped on the 26th, on which day she was up, still feeling very feeble, but otherwise free from complaint. On the 2d of June she was discharged.

CASE III.—T. B., a stont-looking woman, aged 26, admitted Sunday, May 3d. Next day, at visit, found her

lying with flushed cheeks and wandering eyes, and a cold compress on her head ; she would not speak above a whisper, saying that she was unable to do more ; stated that for eight days past she had been suffering from alternate attacks of cold and heat ; had no headache nor pain anywhere ; was thirsty, and could not sleep ; tongue coated and dry ; pulse soft and accelerated. (*Belladonna, fourth dilution, three times daily.*) On the 7th she would neither speak nor take medicine, and continued lying in this stupid state till the 9th, when she seemed more sensible ; her state otherwise unchanged. 12th.—Has had a slight bleeding at the nose ; complains of pain in the throat, but nothing can be detected on examination ; she also swallows quite easily, sleeps well, speaks rationally ; the pulse is quieter ; the skin cool and moist ; tongue clearing and moist. The feeling in the throat continued for a day or two longer, and then disappeared. She continued improving till the 31st, when she was allowed to rise, the medicine being discontinued ; and on the 4th of June she was discharged, pain in the abdomen and diarrhoea having been altogether absent.

CASE IV.—S. T., a stout woman, aged 26, admitted Wednesday, May 6th. Stated that she had been unwell for eight days. Her tongue is dry and cracked ; pulse accelerated ; skin cool and moist ; no pain in the abdomen. (*Bryonia, third dilution, four times daily.*) 9th.—Covered with perspiration ; tongue with dry brown scales. 15th.—Slight pain in abdomen on pressure ; it is also tympanitic ; seemed, however, better ; tongue moist ; skin cool, and pulse quieter ; bowels opened three times ; diarrhoea continued for four days. On the 21st her cheeks were flushed ; pulse fuller and faster ; delirium came on during the night. 22d.—(*Bryonia omitted ; opium, third dilution, three times daily.*) Tongue dry ; skin hot, with an increase of the fever during the night. In this state she continued till the 27th, on which night she died. No section.

CASE V.—M. E., a female, aged 31, admitted on

Thursday, May 7th. Next day at visit stated that she had been ill for four days with headache and feeling of weakness ; her tongue is dry and coated ; pulse feverish ; pain in abdomen on pressure. (*Belladonna*, *third dilution*, *four times daily*.) To this was added, in a few days, cough and expectoration of a dark-coloured mucus ; and on May 11th, on account of difficulty of expectoration, the belladonna was alternated with *senega*, *the fourth dilution* ; the percussion-sound was good ; the auscultation gave mucous and sonorous râles. On the 17th of May the belladonna was omitted and *arsenic* given. On the 20th she expectorated a membranaceous mass about the size of a finger ; the pulse is quick and weak ; countenance rather sunk ; face pale and lips blue ; skin still hot ; delirious at nights. 22d.—The *senega* omitted, and *opium*, *third dilution*, *four times daily*, substituted. 23d.—Pulse upwards of 130, feeble ; thirst great ; hands and arms tremble ; breathing hurried. 24th.—Bowels opened four times ; pulse somewhat improved. 28th. *Carbo* substituted for *arsenic* ; diarrhœa continues ; alvine discharges black ; almost constantly sensible ; pulse firmer ; appearance somewhat improved. June 2d.—The diarrhœa has nearly ceased ; the countenance again sunk ; pulse quick and feeble ; expectoration difficult ; *senega* to be given instead of *opium*. 4th.—Bowels still loose ; looking better ; slept a little. 8th.—Sleeps well ; cough gone ; pulse quiet and stronger. 9th.—Skin cool ; feels altogether better. 10th.—Complains of pain to-day for first time ; a slough is forming over right hip, which did not, however, separate till the 20th ; it was as large as a man's fist. During this time she had considerably improved, but after this she once more relapsed, gradually sinking, and died on the 28th. No section.

CASE VI.—K. K., a girl, aged 18, admitted June 15th. Stated that she had been ill for eight days, the illness commencing by attacks of cold and heat, accompanied by a continuous headache and pain in the abdomen ; has been during this period treated homœopathically ; the skin is

hot and dry ; the tongue dry, brown, and cracked ; pulse fast, but rather feeble. (*Arsenic, fourth dilution, three times daily.*) 16th.—Has been restless and feverish during night ; wandering occasionally in mind ; tongue and teeth covered with black sordes ; her face is pale. She continued in this low delirious state, with increase of fever at night, discharging her urine and fæces involuntarily, diarrhœa having set in on the 20th, till the 25th, when her pulse improved, becoming quieter, and her tongue moister. On the 26th she was livelier, and answered questions more readily. 28th.—She again relapsed ; tongue dry ; skin hot ; pulse accelerated. *July 1st.*—Pulse weak, scarcely perceptible ; respiration hurried ; face pale and death-like ; four stools. 2d.—Skin cool ; respiration more regular ; tongue moister ; pulse quieter ; her mind wanders still occasionally. The tongue now began to clear ; she lost her wandering, and gradually became more lively in appearance ; pulse became quiet, and gradually improved in strength—in short, from this time she steadily improved till the 26th, when she was discharged.

CASE VIII.—M. S., a female, aged 21, admitted July 20th. She was partially delirious, and unable to give any account of herself, except that she had been unwell for three weeks. The tongue is red, cracked, and bleeding ; respiration difficult ; pulse fast and weak ; pain in abdomen on pressure ; percussion-sound good ; respiration vesicular, mixed with râles ; sputa yellow, streaked with blood, and slightly adhering to the vessel. (*Phosphor. third dilution, every second hour.*) She gradually sank, and died on the 26th. No section.

The general run of the cases here resemble the first two or three. Those like the latter seem only admitted occasionally—I suppose by way of attempting a bold stroke. Although I have at present got no more cases written out, yet I have all the severe ones noted, and the period of treatment, which I could furnish you with, if necessary. The average period of treatment was twenty-three days.



## FEBRIS GASTRICA.\*

There were also 23 cases of febris gastrica treated. The average period of treatment was 10·8 days ; the average age 27·8 ; they were all trifling except the following.

CASE.—S. D., a stout boy, aged 15, has been unwell for the last five days ; complains of sickness and headache, with a feeling of oppression over the stomach ; the tongue is coated but moist ; the pulse full, and rather fast. He was admitted on the 17th of May, and got *the third dilution of nux* (vomica ?) *four times daily*. 29th.—He has been delirious during night, and this still being the case, on the 20th he got *hyoscyamus* instead of *nux*, in the same dose and manner. May 24th.—He was asleep ; great meteorismus ; pulse full and frequent ; tongue still moist ; skin hot. On the 28th of May the delirium was gone, the pulse quiet, and the skin more natural. He continued after this to improve ; the medicine was not, however, stopped till the 11th of June, and he remained in hospital till the 26th of July.

## INTERMITTENT FEVER.

There were, during the three months, 41 cases of intermittent fever treated ; the average age of the patients being 22·38. All but a very few received medicine at once on entering, without waiting to see whether they had a fever or not ; a few had it once slightly, and it never returned. In 7 or 8 it never came on at all, and 30 had it repeatedly, the average number of attacks being 4·7. One had as many as 13 ; in one case the fever, from a tertian, became quotidian, and grew so much worse that the patient was discharged at his own request. The remedies employed were china, second and third dilutions, three or four times daily ; ipecacuanha, the first dilution, and *nux*, the third, alternately three or four times in the course of the day ;

\* A term at that time used to designate a less severe form of enteric fever.



and ipecacuanha and nux alone in the second dilution more rarely ; arsenic, the fourth, or aconite, the third dilution. Chinin was only twice employed, each time in the second trituration.

Skoda's cases of ague at the General Hospital are treated in the following manner:—Each patient, on complaining, gets some extract. centaurii or taraxaci, or some such thing, and one attack is observed. If that come about the time specified, good—the further treatment is proceeded with ; if not, a second attack is waited for, so that the time about which the fever may be expected may be known ; then, supposing it to come at nine o'clock, the patient gets two grains of sulphate of quinine at six, at seven, and at eight—at each hour two grains. The fever, if it be a regular one, may come slightly once after this, but never oftener ; so that in regular cases three times is the oftenest, generally only twice, and in rare and irregular cases four times, never oftener ; but it also very frequently remains away altogether under the use of the bitter extracts even where it has been of six weeks' duration, as I have myself seen. The powders are continued for three or four days after the last attack, in the same manner ; a recurrence of the fever during the residence in the wards has not yet been seen, though this residence is sometimes, from the nature of the hospital regulations, protracted.

To return to the Homœopathic Hospital. In one case the fever returned after three weeks' absence, during the girl's residence in the wards ; after two attacks it again left. Two of the patients I have seen in the cold fit of the fever, and can testify as to its severity ; and two or three I have also seen in the hot fit. A boy who had one of the severest fevers returned, after six weeks' absence, on account of bronchitis ; he was looking much better, but as he spoke nothing but Bohemian, I could not interrogate him as to his fever. The following case was also put down as an intermittent :—

CASE.—W. M., a boy, aged 12, admitted on Sunday,

June 28th. Next day at visit stated he had fever every day for the last four weeks. The attending sister stated that she had observed no cold fit the previous evening, though he had a hot one. (*China, second dilution, four times daily.*) Upon a cross-examination, after Dr. Fleischmann had passed on, he said that for three weeks he had a regular fever, since then every evening merely a hot fit. The percussion over the heart is dull from the third to between the seventh and eighth ribs. The first sound of the heart is somewhat impure; the pulse is irregular, every five or six beats one failing, or rather in its place a faltering sort of beat is to be perceived; when lying on his back the heart's pulsations were not perceptible to the touch, though when he sits up and leans slightly forward they are then readily felt. This having been found, and stated to Dr. Fleischmann, he declared that, on account of the absence of both pain and oppression in the breathing, he could not believe that there was any exudation present, he still believed him to have intermittent. On the 29th and 30th he was stated to have had regular fever, and said himself that he had a slight cold fit; after this he had no more. He was up on the 8th, and discharged on the 9th, the percussion-sound over the heart being unchanged, the first sound purer, and the pulse less distinctly intermittent.

#### RHEUMATISM.

There have been 27 cases of rheumatism; the average age of the patients was 25. The following deserve notice:—

CASE I.—M. K., a young woman, aged 20, admitted on the 4th of May. The knuckles of both hands are considerably swollen and red; elbows slightly; complains of pains throughout the body and a pain in the left side; she states that she has suffered from rheumatic fever for fourteen days; there is a slight bruit with the first sound of the heart. (*Spigelia, third dilution, four times daily.*) The arms were after this enveloped in cloths dipped in cold water, and covered with oilskin; these were not changed as long as

they were damp ; continued complaining grievously of pain till the 9th, when a diarrhœa set in, after which the swelling and redness of the joints disappeared and the pain speedily ceased. By the 16th the slight bruit was entirely gone ; the joints were quite well ; the diarrhœa still continuing, the spigelia was stopped and *ipecacuanha* given ; the diarrhœa did not return, and on the 23d she was discharged cured.

CASE II.—J. P., aged 16, a young man, admitted Tuesday, May 12th. Said that eight days ago he had a rigor followed by a hot fit. Since then his ankles, knuckles, and wrists have been swollen, red, and painful, even on the slightest motion ; he complains of pain in left chest, and has a slight cough. (*Acidum phosphoricum*, third dilution, four times daily.) Upon auscultation a bruit is heard with the diastole, over apex of heart. The rheumatism, without further treatment, was quite gone by 16th or 17th, leaving, however, a weakness in the ankles, which continued till his discharge. He is altogether a feeble-looking young man ; the bruit also gradually diminished, and by the 27th was entirely gone. He was not discharged till the 10th of June.

CASE III.—Another articular affection of a similar nature, occurring in a girl aged 18, and admitted on the 10th of June, of five days' standing, was treated solely by the wet compresses, and in five days she was discharged cured.

CASE IV.—A. B., a delicate woman, aged 24, admitted on the 25th of June with a general rheumatic affection of eight days' standing. She had for a year previously suffered under chronic gout and abdominal congestion, as she called it "*leberkrankheit*." She continued without any medicine, and without expressing any peculiar feeling of pain, till the 15th of July, when she got *Rhododendron*, third dilution, three times daily. The pain has settled in the left knee, and almost entirely left the rest of the body ; she complained of the most excruciating agony there, and continued to do so till the commencement of August, when I left. The last two or three nights she had not closed an eye ;

she was rapidly emaciating, and the attending sister said that her knee was much swollen, yet no examination was made.

CASE V.—K. B., a healthy-looking young woman, aged 24, admitted June 28th. Stated that a year ago she had an attack of rheumatic fever, and since then had never been entirely free from occasional twinges ; that eight days ago, on exposure to cold, the pains in her knuckles, wrists, and ankles had returned, accompanied by oppression in the chest, and occasional fits of difficult respiration. The affected parts are not the least swollen—indeed she can move them pretty freely ; over the heart a bruit is heard at the apex along with the first sound ; second sound is natural, but above it, in the aorta, is heard, synchronous with the systole, a loud rasping noise ; her menstruation is quite correct ; she has had a blister on the chest. (*Spigelia, third dilution, four times daily.*) The fits of dyspnœa recurred for four or five days in the evening, and then left ; the first sound of the heart became purer, the rasping sound in the aorta still continued ; the pulse was generally quiet, and of tolerable strength, but she was much troubled with palpitation, generally recurring about noon. On the 9th of July her hands and ankles were swollen and painful, and continued so till the 13th, when the swelling again vanished ; neither the appearance nor disappearance of this had any effect on the general symptoms. About the 29th of July rheumatic headaches made their appearance, and gradually increased in severity till she was discharged on the 3d of August. The sound in the aorta the same as before. The first sound still impure, the ankles weak and painful, the palpitations recurring daily.

The following case had also “Rheumatism” written as its diagnosis :—

CASE VI.—J. P., a young man, aged 19, complains of pain along the region of the spine ; the inferior extremities are nearly completely paralysed ; whenever he attempts to move them he only produces slight convulsive twitches ; an enlarged gland is situated in the right sub-

maxillary region. (*Dulmacara, third dilution, twice daily.*) The urine flows off spontaneously ; the bladder on percussion is found to be quite distended, and in this state it remained during his residence. On the 28th of June the dulcamara was omitted, and *nux, first dilution, four times daily*, given. He had two or three attacks of intermittent, and *ipecacuanha* was added on the 31st ; this did not recur. On the 1st of July, having had no motion for eight days, and the abdomen being quite tympanitic, a clyster was given. After this nothing occurred ; he gradually sank, and died on the 28th of July, sores having formed on his œdematous feet.

The other cases of rheumatism were pleurodynia, or slight muscular pains. The two following cases remained in the hospital when I left :—

CASE VII.—A girl, aged 16, admitted on the 31st of July. She had been ill with rheumatic fever for three weeks. The right elbow and shoulder and left ankle were swollen, red, and painful ; there was no heart affection. She got *aconite, second dilution, every second hour*.

CASE VIII.—A girl, A. F., aged 23, and admitted on the 27th of July, had been ill five days with a rheumatic attack in the muscles of the neck, and subject to daily exacerbation in the afternoon. However, on the afternoon of her admission this had not taken place ; consequently could not be attributed to medicine, which she had not got. She improved steadily, and though well was not discharged when I left. She had *aconite, third dilution, four times daily*.

#### DIARRHŒA.

There were eleven cases of simple diarrhœa treated : average age 26·3. The medicines employed were *acidum phosphoricum, second and third dilutions ; ipecacuanha, third dilution, four times daily*. In no case was the diarrhœa checked or even moderated on giving the medi-

cine, but in the course of a few days it gradually ceased, though frequently with previous exacerbations.

### DYSENTERY.

Three cases of dysentery occurred.

CASE I.—A female, aged 31, admitted on Friday, May 8th. Has been unwell for eight days ; yesterday the stools were, for the first time, accompanied by blood and straining ; no thirst nor pain in abdomen ; tongue coated but moist ; pulse very little accelerated. (*Sublimat. third dilution, four times daily.*) The stools continued five or six times daily, mixed with blood and mucus till the 12th of May, when they became more natural ; ceased altogether on the 13th. The medicine was stopped on the 15th, and she was discharged on the 18th.

CASE II.—A man, aged 28, who had been unwell for three or four days ; his stools on admission, the 29th of April, were chiefly blood and mucus, accompanied by straining and pain in abdomen on pressure : they amounted to forty in the course of the day. (*Sublimat. the third dilution, four times daily.*) His pulse is slightly accelerated ; skin natural ; tongue moist ; the fever increased slightly for a day or two, the skin becoming hot, and the tongue dry, and again relaxed, both returning to their natural condition. On the 7th of May the stools had diminished to eighteen. *Sublimat.* removed, and *rhus, third dilution, three times daily*, substituted ; to which *ipecacuanha, the second dilution, four times daily*, was added on the 9th. By the 12th the stools were more natural, and by the 14th had entirely ceased. He remained in hospital, having been much reduced, till the 4th of June, when he was discharged.

CASE III.—A. S., a woman, aged 45, admitted July 14th. Stated that for eight days she had been afflicted with bowel-complaint, having had thirty stools in the course of each day. Each stool consisted of watery mucus, mixed with blood, and was accompanied by straining and griping. She



has headache, feverishness, and sweats much, sleeping little ; the pulse is full and accelerated ; the tongue coated and moist. (*Sublimat. third dilution, every third hour.*) 15th.—Has had only one stool since admission, and that one without blood, free from pain, and more natural ; slight pain in abdomen on pressure. Her bowels were not again opened till the day before dismissal, when she had a natural stool ; the pain in abdomen had entirely disappeared. She was dismissed on the 20th of July.

### CHOLERA.

Two cases resembling cholera sporadica were treated.

CASE I.—F. F., a man, aged 26, admitted Sunday, July 12th. Has always previously been healthy till Tuesday last, after eating a “saures rindfleisch,” which is meat two or three days after its first cooking, rewarmed with a sour sauce, and which, I have been assured, very frequently produces the same symptoms, being a slight poison. Since then he has been almost constantly purging and vomiting ; has vomited twice to-day greenish matter ; stools to-day have been seven—watery, and forcibly expelled ; he has headache, pain in the abdomen, cramp in the hands and feet ; frequent eructations and great thirst ; the tongue is red and dry ; pulse fast and feeble ; voice low and faint. (*Veratrum, second dilution, every second hour.*) 13th.—Feels better ; has not vomited ; only twice had stools since yesterday ; two attacks of cramp in the hands during night ; his pulse is a little fuller, and the voice improved. 14th.—Bowels again twice opened ; no cramps ; tongue moist, clean ; pulse full and quiet ; appetite returned. 15th.—No pain anywhere, nor cramps ; bowels opened twice. 17th.—Medicine omitted, and on the 20th he was discharged.

The second case, with somewhat similar symptoms, was admitted on the 31st of July, and was left in treatment. The patient (a woman) was not, however, improving so rapidly.



## COLICA.

There were three cases of colic.

CASE I.—This was a simple colic ; ceased in a few days under the use of *opium*, the *sixth dilution*, *three times daily*.

CASE II.—This a colica menstrualis. The patient got *cocculus*, *sixth dilution*, *twice daily* ; the third day became furiously delirious, for which she got *stramonium*, *third dilution*, *four times daily*, and was then removed into a private room, after which I never saw her.

CASE III.—H. B., a stout man, of 42, admitted Thursday, July 16th. He stated that he had been for years a painter ; had previously had colic four or five times, for which he had been treated in the General Hospital here, and this was his first trial of homœopathy. He had intermitting pain in the abdomen, twisting about the umbilicus, and relieved by pressure ; obstinate constipation ; cramps in the calves of the legs and arms ; loss of power in the hands ; the edge of the gums, where they join the teeth, is of a blue colour ; pulse quiet. (*Opium*, *first dilution*, *four times daily*.) 17th.—During the night he got a clyster, which brought away some fæcal matter, and he is now easier. 18th.—The pain has returned somewhat ; he again got a clyster, which again brought away some fæcal matter, and afforded some relief. On the 20th the attack was again worse, but it had got better spontaneously by the 21st. He says himself that it is his worst attack, and that he has been more speedily relieved than at any former period. After this the pain and cramps remained entirely away, his hands were restored to their wonted condition, but his bowels were not opened since the 18th till the 27th, when they spontaneously and copiously relieved themselves. He was discharged on the 28th.

## SCARLATINA.

Two cases of scarlatina were treated.

CASE I.—J. R., aged 12, admitted July 9th. The next day, at visit, he was lying with his eyes shut, in a half-comatose state ; was stated to have been very restless during the night, and was indeed bound to the bed. On being aroused, which he readily was, though he speedily relapsed, he stated that since Sunday he had been unwell with pain in the abdomen and throat. His whole skin is of a bright scarlet colour, which disappears on pressure, returning from the circumference ; his tongue red and dry ; throat is scarcely to be seen, on account of his unwillingness to open his mouth, and when it is forced open he complains of pain most grievously ; it is internally much swollen and red ; no swelling externally ; he has had a few leeches on his throat ; pulse very feverish ; skin hot. (*Belladonna, first dilution, every second hour.*) 11th.—An eruption like sudamina is scattered over the chest ; he has been more restless than ever during the night ; the comatose state still continued. The fever increasing, he died on the evening of the 12th. No section.

CASE II.—J. K., a boy, aged 7, admitted Sunday, July 26th. Next day, at visit, he complained of sore throat, but was unable to state how long he had been ill. Skin covered with a red rash, which disappears on pressure, returning from the circumference, and in points ; he has on a thick cotton night-shirt, beneath that several cloths ; his hands and feet enveloped in stockings, so that nothing but his face is left uncovered ; he will not put out his tongue ; his pulse is very slightly accelerated, for a boy of his age perhaps not at all. (*Belladonna, third dilution, every third hour.*) 29th.—Tongue red and dryish ; eruption beginning to fade. 30th.—The cuticle beginning to scale off ; his pulse is full and slow. 31st.—Sitting up ; a slight ulcer has formed on the tip of the tongue ; medicine discontinued ; his stockings, etc., are discarded ; I left him running about the ward quite well.

## PNEUMONIA.

CASE I.—F. H., a stout-looking young man, aged 22, admitted on the 5th of May. Next day, at visit, stated that five days previously, after a sudden cooling, he had been attacked by alternating fits of cold and heat, followed by pain in the chest and cough ; the two latter symptoms have since been constant, though the cough has not been very troublesome ; he has, however, during the night expectorated a considerable quantity of a dark bloody-looking fluid, which still continues to be brought up in less quantity, mixed with mucus and saliva ; his countenance is extremely anxious ; his respiration hurried and imperfectly performed ; his pulse full but extremely rapid ; on percussion the sound on the right side anteriorly is good as low down as the centre of the mammary space ; on the left the same, with the exception of a space of two and a half inches from the left edge of the sternum and from the fourth rib ; this space, and all beneath on both sides, is dull ; this dullness posteriorly extends as high as the centre of the scapular and intrascapular spaces on both sides ; the respiration on both sides, over the dull portions, is pure bronchial ; over the superior portions of both lungs vesicular ; though, from the above-mentioned state of the respiration, not always very distinct. (*The third dilution of phosphorus was ordered to be given every second hour.*) The patient died on the afternoon of the 6th.

SECTION, *Friday 8th*, 10 A.M.—On opening the thorax both lungs were found firmly connected by cellular adhesions to the parietal pleura, particularly their inferior lobes ; over the superior and external portion of the right lung was a small, soft, albuminous-looking exudation, of about half an inch thick ; the inferior lobe of the left lung and the inferior and middle lobes of the right one were in a state of red hepatisation, soft, and easily broken down ; a considerable quantity of reddish serosity gushed from their cut surfaces ; the superior lobes of both lungs contained a

quantity of frothy mucus ; the cavities of the heart and large vessels contained a small soft clot ; the intestines were gorged with blood, and the glands of the ileum slightly swollen. The other organs were not examined, except the spleen, which was soft, but scarcely enlarged.

CASE II.—F. H., a healthy-looking boy, of 16 years, admitted on the morning of Saturday, May 9th. At visit, same day, stated that two days ago he had a rigor followed by a hot fit, accompanied by perspiration, and followed by pain in the left breast and cough, which were, however, so slight that he came in only on account of the feverishness which still continued. He has always previously been healthy, and never subject to cough ; his cheeks are flushed ; tongue somewhat coated, but moist ; pulse full and accelerated ; sputa frothy mucus streaked with blood ; percussion-sound normal ; respiration vesicular—masked, however, on the posterior portion of the left side, from the lower third of the scapular space downwards, by a fine crepitating râle. (*Aconite, the fourth dilution, every third hour.*) 10th.—Where crepitation was yesterday audible, bronchial respiration is to-day to be heard ; the percussion-sound is also over the same space dull ; anteriorly, from the lower portion of the mammary space downwards on the left side slightly tympanitic, otherwise normal ; the sputa are now rusty, and slightly adhesive. 11th.—The pulse is to-day much quieter ; the physical signs remain the same. This state continued till the 13th, when over the superior portion of the dorsal space a crepitating râle was audible, accompanied by bronchial expiration ; in the lower portion of the scapular space the respiration is still pure bronchial ; dulness on percussion the same ; right side normal in every respect. 14th.—The dulness on percussion is to-day but slightly perceptible ; the respiration is everywhere vesicular ; over that portion of the left lung where bronchial respiration was formerly heard it is a little rougher than elsewhere, and accompanied by an occasional mucous râle. He has been a little restless and slightly

delirious during the night ; quite calm and collected now ; has also had a slight bleeding from the nose ; expectoration mucous ; skin cool ; pulse quiet and regular ; tongue moist and clean. 15th.—Has again had a slight bleeding from the nose ; percussion-sound everywhere normal ; auscultation gave vesicular respiration, with a few mucous râles ; the cough pains him slightly, and he has a general feeling of soreness over the chest ; appetite has returned ; his expectoration is mucous, and but slight. He continued improving, the râles not having been again heard ; and on the 18th was allowed to get up, and discharged on the 21st.

CASE III.—F. D., a slightly-made boy of 16, with a clear skin and delicate complexion, admitted on Saturday, May 16th. Stated that he had been unwell and feverish since the Thursday previous, with slight cough and pain in the chest ; he had formerly been subject to cough ; percussion-sound over the right lung posteriorly was dull as far down as the centre of scapular space ; anteriorly over the same lung tympanitic, as low as the commencement of the mammary region ; over the rest of the chest normal ; the respiration was found on auscultation everywhere vesicular, with the exception of the above-mentioned dull space, where it was bronchial ; tongue moist and coated ; pulse full and accelerated. (*The fourth dilution of phosphorus to be given every third hour.*) In this state he continued, the pulse remaining firm and full ; the skin hot and dry, and the inflammation progressing daily till the 20th ; when the whole of the right side posteriorly was found dull on percussion, and the upper portion of the left, as low down as the middle of the scapular space ; anteriorly, over the entire right side, the sound is tympanitic ; over the left side normal, with the exception of the subclavicular space, where it was somewhat duller. On auscultation, pure bronchial respiration was heard over the entire right side, and the superior portion of the left, posteriorly ; elsewhere the respiration was vesicular, and, though some-

what quickened, not laboured ; the sputa were rusty and adhesive ; the skin hot and dry ; the tongue coated and dry ; pulse full and bounding. 21st.—On the left side, posteriorly, the dulness and bronchial respiration to-day extend as far down as the lower third of the scapular space ; the other physical signs remain unchanged ; the skin is cool ; pulse quiet, and the tongue moist. 22d.—The percussion remaining the same ; the sounds, on auscultation, are so far altered that over the acromial and upper third of the scapular space, on the right side, instead of pure bronchial, an undecided respiration is heard. 23d.—The physical signs the same as yesterday, with the addition of a slight crepitating râle occasionally audible over the right acromial and upper portion of the scapular region ; the patient is looking livelier ; his skin cool ; pulse quiet ; expectoration looser and more catarrhal. 24th.—Percussion as formerly ; the respiration over the entire right side, posteriorly, was rough vesicular, puerile, mingled with occasional crepitating râles ; anteriorly, on both sides vesicular ; posteriorly, on the left, as low as the centre of the scapular space, undecided ; pure bronchial over the lower half of the scapular space ; beneath vesicular ; expectoration colourless mucus. 25th.—Vesicular respiration everywhere to be heard, a little rougher in character over the lower half of scapular space of the left side ; where the bronchial respiration was yesterday audible, no râle is to-day audible. 26th.—Physical signs as yesterday ; the dulness on the left side perhaps a little less distinct, and a few subcrepitant râles are heard over the right posterior dorsal space ; cough is not so troublesome ; expectoration easy, mucous. 27th.—Left acromial and scapular regions decidedly clearer ; right side dull posteriorly ; no râle audible ; respiration everywhere vesicular. 28th.—Entire left side clear on percussion ; otherwise no change. 29th.—No change. 30th.—Dulness over right side, posteriorly, less in intensity ; anteriorly, normal ; left side normal ; numerous râles are to-day mixed with the vesicular respira-



tion ; the expectoration and cough are somewhat increased. (*Medicine to be given only thrice a day.*) The patient continued daily to improve, and on the 4th of June there was only an occasional mucous râle audible over the right dorsal region ; and on the 6th, full, clear, vesicular respiration was everywhere audible ; the chest expanding well, and the cough gone ; but still the percussion slightly dull, on the right side posteriorly ; after this the patient was always up and dressed during visit, and was discharged on the 11th of June.

CASE IV.—L. U., a stout healthy-looking young man, aged 18, admitted on Saturday the 16th of May. Stated at visit, next day, that he had been on the previous Wednesday seized with pain in the chest and cough, which continue. Percussion-sound anteriorly over left side normal ; over right side tympanitic, as low as commencement of mammary space ; posteriorly, left side, normal ; right side dull, down to centre of scapular space ; beneath normal ; respiration everywhere vesicular, except over dull space on the right side posteriorly, where it was bronchial ; sputa rusty, adhesive ; pulse quick and full. (*The third dilution of phosphorus to be given four times daily.*) 18th.—Physical signs the same ; skin covered with profuse perspiration ; bowels opened six times. 19th.—Bowels to-day not opened ; on auscultation, where the bronchial respiration was audible, it is now undecided and mixed with a fine crepitating râle ; pulse quiet and regular ; expectoration mucous. 20th.—Respiration to-day everywhere vesicular ; the crepitant râle still audible in the same situation as yesterday. 21st.—The percussion-sound over affected part is to-day somewhat clearer ; condition otherwise the same. 22d.—Percussion-sound still improving, and on the 23d everywhere good ; the vesicular respiration is everywhere audible, and free from admixture of râle ; cough gone. After this the patient remained in hospital free from all complaint till the 28th, when he was discharged.

CASE V.—E. B., a stout-looking woman, aged 48,



admitted Saturday, May 16th, afflicted with pain in chest and difficulty of breathing. She got *the third dilution of aconite, four times daily*; exchanged on the 20th for *the third dilution of phosphor. four times daily*; and being on the 21st evidently much worse, mind excited and wandering, expectoration retained, *tartarus emeticus* was given in the *second dilution* three times daily. The patient died during the day.

SECTION, *Saturday, May 23d, 10 A.M.*—Extensive plastic exudation was found between the visceral and parietal portions of left pleura, forming at the lower portion a sac containing fluid; the entire inferior lobe of left lung in a state of gray hepatisation; right lung and upper lobe of left, though not to the same extent, gorged with blood and serum; bronchi filled with frothy mucus; right lung connected to costal pleura by old cellular adhesions; a small amount of plastic exudation in the pericardium; the right heart contained a fibrous clot, the left one was empty; other viscera, so far as examined, normal.

CASE VI.—A. T., a stout-looking man, aged 46, admitted Thursday, May 21st. Same day, at visit, stated that he had caught cold, and had now great pain in breathing, accompanied by a slight cough; he has not expectorated since admission; percussion everywhere normal; respiration vesicular; pulse full, strong, and accelerated. (*Aconite, the third dilution, four times daily.*) 22d.—Expectoration rusty, blood-stained; percussion anteriorly on left side normal; on right side dull from the centre of mammary space downwards; posteriorly, on left side normal; on right side dull from the centre of scapular space downwards; dulness likewise extends round over the lateral and infralateral spaces; over dull spaces the respiration is pure bronchial, elsewhere vesicular; pulse still full and bounding; *aconite* stopped, and *phosphor.* given, the *third dilution, four times daily.* 23d.—Not examined, on account of his evidently dying condition;

the breathing hurriedly and imperfectly performed ; the countenance extremely anxious ; pulse still more accelerated, but failing in firmness and strength. He died in the course of the day. No section was made.

CASE VII.—F. B., a young woman, aged 24, admitted Sunday, May 24th. Next day, at visit, she stated that, having been always previously healthy, she had five days ago caught cold, and since then had been suffering from pains in the chest, accompanied by cough, most troublesome at night. Expectoration slight, rusty, and adherent ; has no headache, and no appetite, but great thirst ; percussion-sound good, except posteriorly over right lung, as far down as centre of scapular space ; beneath this good ; on auscultation, mucous râles are heard pretty generally distributed over both lungs ; over the dull space bronchial respiration is audible ; pulse accelerated ; tongue coated, inclined to be dry. (*Phosphor. second dilution, three times daily.*) 26th. —Physical signs the same ; the râles, however, are not audible to-day ; the tongue is moister, pulse quieter. 27th.—The expectoration more mucous, less adhesive, still blood-stained ; respiration undecided over dull portion. 28th.—Respiration everywhere vesicular ; over the dull portion rougher, more puerile ; expectoration mucous ; the dulness is also a shade better. After this she continued improving ; by the 31st her cough was entirely gone ; the medicine was, however, not discontinued till the 2d of June, and she was discharged on the 4th with still a shade of dulness over the right side posteriorly, extending, however, no farther than the top of the scapular space.

CASE VIII.—A. S., a young man, aged 17, admitted Wednesday, May 27th. Next day, at visit, stated that the previous Sunday he had fallen suddenly to the ground without known cause ; had always previously been healthy. Has since then been troubled with headache, sleeplessness, slight cough, and pain in the chest ; he feels weak, and is tormented by thirst ; his tongue is red, but moist ; skin

natural, and pulse but slightly accelerated ; the percussion-sound is anteriorly normal, with the exception of over the right clavicle, where it is slightly dull, and where a fine mucous râle is to be heard ; posteriorly, on the left side, normal ; on the right one also good, down to nearly the inferior border of the scapular space, beneath which it is dull ; the respiration is vesicular, obscured posteriorly on the right side by loud, sonorous, and sibilant râles ; expectoration a jelly-like mucus. (*Phosphor. fourth dilution, every third hour.*) 29th.—Face to-day has a dingy appearance, with a dusky red spot on each cheek ; pulse more accelerated ; sputa adherent, of a deep orange colour ; percussion as yesterday ; pure bronchial respiration over the posterior inferior portion of the right chest, mentioned yesterday as dull ; superiorly, still an occasional sonorous râle to be heard. 30th.—The dulness on percussion extends now half across the inferior portion of the lateral and infralateral spaces ; anteriorly, the right infra-mammary and inferior portion of the mammary spaces are tympanitic, the rest normal ; bronchial respiration is audible over the dull portions ; sonorous râles are now more audible over the right anterior portion of the chest. 31st.—Posteriorly, the percussion-sound remains the same ; the portion anteriorly, which gave yesterday a tympanitic sound, gives to-day a slightly dull sound ; where bronchial respiration was yesterday audible, the respiration is to-day undecided, and accompanied by consonating râle. *June 1st.*—The percussion remaining the same, a fine, loud, consonating râle is heard over the dull spaces, both anteriorly and posteriorly on the right side ; the left side still gives only vesicular respiration ; the skin is still dingy ; the sputa less yellow and more copious ; the pulse quieter. 2d.—The percussion unaltered ; the râles less frequent ; the expectoration more copious, and now of gray mucus ; the patient sleeps better, and the colour of his skin has decidedly improved. 3d.—Percussion, posteriorly and laterally, as formerly ; anteriorly normal, except over right clavicle, where dulness

still continues ; auscultation as formerly ; expectoration grayish mucus ; tongue moist and natural ; skin cool, pulse quiet. 4th.—A few consonating râles still to be heard, mixed with an undecided respiration. 6th.—Percussion good, excepting, as before, over the right clavicle, and also the right infralateral and inferior portion of lateral region, where it is still a little dull ; the respiration is also there undecided, elsewhere vesicular ; somewhat puerile over the posterior inferior portion of right chest. On the 8th, the percussion and respiration being everywhere normal except over right clavicle, where slight dulness still continues, the medicine was discontinued ; the expectoration trifling ; cough almost gone. On the 10th he was up, and on the 15th discharged, both having entirely ceased.

CASE IX.—M. U., a young woman, aged 19, admitted on Thursday, May 28th. Stated next day, at visit, that on the Sunday previous she had been seized with shivering, followed by heat, pain in the chest, and cough. Has been previously subject to cough ; expectoration tolerably copious, adherent, and blood-stained ; percussion normal, except posteriorly on the right side, where it is dull as low down as the centre of the scapular space ; beneath that normal ; over the dull portion bronchial respiration is heard ; over the rest of the chest sonorous and sibilant râles. (*Phosphor. the second dilution, to be given every second hour.*) 30th.—Expectoration more copious ; cough more troublesome ; physical signs unchanged. 31st.—Breathing laboured and anxious ; entire right side posteriorly, dull ; anteriorly also ; percussion-sound less clear than on the left ; posteriorly, over right chest, bronchial respiration was heard, mixed with consonating râles ; over the left side sonorous, and sibilant râles ; anteriorly over both sides, loud, sonorous, and sibilant râles to be heard ; expectoration still copious : pulse full and accelerated. June 1st.—Physical signs unchanged ; breathing less oppressed, and her look less anxious. 2d.—The râles are to-day not so frequent. 3d.—They are to-day much louder, especially anteriorly, and

quite perceptible to the touch—*i.e.* the thrill caused by them is so ; and the respiration is again more laboured ; the pulse is, however, not so feverish. 4th and 5th.—Her condition continued to improve during these two days ; the expectoration becoming more copious, and more free from blood-stain ; and on the 6th there were anteriorly no more râles to be heard ; the percussion, anteriorly, is normal ; posteriorly, the right side is still dull ; the respiration there is, superiorly, undecided ; inferiorly, disguised by sonorous râles ; a few of these are also to be heard over the left chest posteriorly ; the expectoration is copious, gray, frothy mucus ; the cough is troublesome. (*Medicine to be given only twice daily.*) 7th.—Except an improvement in the percussion-sound of right chest, her state is unaltered. 8th.—Percussion everywhere good ; respiration vesicular—disguised, posteriorly, on the right side, by sonorous râles. 10th.—Vesicular murmur to-day everywhere audible ; cough greatly better ; expectoration more easily brought up, less copious. On the 11th she was allowed to rise ; and was discharged on the 13th, her cough having entirely ceased.

CASE X.—M. B., a stout healthy-looking man, aged 58, admitted Tuesday, June 9th. On the morning of the 10th he was going about the ward, and was not noticed till the end of the visit, when there was no time to examine him ; no medicine was ordered. On the 11th he stated that he had come in the instant he felt himself unwell ; he complained of pain in the chest and cough ; the expectoration copious, adherent, of an orange tint ; pulse full, but slightly accelerated ; percussion, anteriorly, over the left side, tympanitic ; over the right normal ; posteriorly, the entire left side dull ; the right one normal ; respiration vesicular, except posteriorly, over the left side, where nothing is audible but a loud consonating râle. (*Phosphor. second dilution, every third hour.*) This state remained unchanged till the morning of the 15th, when, the percussion-sound remaining the same, instead of the consonating râle formerly

heard, a fine crepitating one is to-day audible over entire posterior surface of left chest ; the expectoration is copious, mucous ; the pain very much better. 16th.—The respiration is to-day vesicular, a few crepitating râles being still audible over their yesterday's seat ; the percussion-sound is also less manifestly dull ; the expectoration less copious, more easily brought up, and cough less troublesome. He gradually improved till the 21st, when the percussion-sound was normal, and the respiration vesicular over the entire chest ; a full inspiration still, however, produces a subcrepitating râle over the former seat of disease ; and this continued to be the case till the 2d of July, the patient having been up and going about since the 22d of June. On the 5th of July he was discharged.

CASE XI.—W. B., a boy of 15 years of age, admitted Friday, June 12th. On the 13th, at visit, stated that for four days he had been troubled with a cough and severe pain in the left side. Expectoration rusty and adherent ; pulse but little accelerated ; the percussion-sound normal, except at the under portion of left chest, where it is dull anteriorly from the centre of the mammary region downwards, and posteriorly from the centre of scapular region downwards ; the dulness extends entirely round, through the lateral and infralateral regions ; the respiration is over the dull portion bronchial, elsewhere vesicular ; the heart's tones are clear and unaltered. (*Phosphor. third dilution, every third hour.*) His condition remained unchanged, his nose having bled slightly on the 16th, till the 17th, when, the percussion being the same, the respiration is over the dull portion undecided, mixed with mucous râle ; bronchophony still continues ; expectoration mucous. 18th.—Again a bleeding from the nose during night. 19th.—The percussion-sound is to-day somewhat clearer ; mucous râle still audible, and, accompanying the respiratory movements, a fine rasping sound is to-day for the first time audible about the lower edge of the scapular space. 20th.—The rasping sound is to-day almost inaudible ; the respiration



vesicular, with a few mucous râles ; the percussion is everywhere normal ; the expectoration trifling, and the cough almost gone ; he is anxious to get up. 21st.—Up and dressed ; chest expanding fully, and without pain. On the 25th, the cough having entirely ceased, he was discharged.

CASE XII.—A. S., a delicate-looking young man, aged 25 years, admitted Sunday, June 12th. Next day, at visit, stated that for the last day or two he had lost his appetite ; had pain in the left side ; feverish pulse ; no cough ; tongue coated, and a slight griping diarrhœa, bowels having been opened three or four times daily ; he had been treated in this hospital December previous for pneumonia ; the percussion was normal, as also the respiration. (*Ipecacuanha, third dilution, four times daily.*) The same afternoon, pneumonia having manifested itself, he got from the assistant, *phosphor. third dilution, every third hour*, the preceding medicine being discontinued. 14th and 15th.—No visit, in consequence of religious feasts. 16th.—Expectoration copious, partly rusty, partly of an orange tint ; percussion everywhere normal, except posteriorly over the inferior portion of the left chest, where it is dull from the inferior border of the scapular region downwards ; over this dull portion the respiration is bronchial, elsewhere vesicular ; pulse feverish ; skin hot and dry ; respiration somewhat laboured. 17th.—The percussion remaining the same, the respiration is to-day undecided ; the pulse quieter ; the expectoration more mucous, blood-streaked ; the breathing more easily performed. 18th.—The dulness to-day extends as high as the centre of the scapular region on the left posterior surface of the chest ; elsewhere it is normal ; over the superior portion of this dull space the respiration is undecided for a short distance down, perhaps the distance of two ribs with the intervening space ; next to this comes a layer of pure bronchial respiration of equal extent, and beneath the respiration becomes again undecided ; over the other parts of the



chest the respiration is vesicular ; the sputa are mucous, and more easily brought up ; cough less troublesome, and unattended with pain. 19th.—The percussion the same ; over the superior portion of left dorsal region a fine crepitating râle is audible ; immediately above this a layer of undecided respiration, and above this, up to the centre of left scapular region, the respiration is bronchial ; elsewhere vesicular. The crepitation gradually progressed over the diseased portion, till by the 23d it occupied it entirely ; the sound, on percussion, had also gradually improved, and was now almost normal. On the 24th he was up and dressed ; cough infrequent ; still feels a slight uneasiness in left chest, but is able to inspire fully without pain. On the 27th he was discharged.

CASE XIII.—A. L., a stout boy of 14 years, admitted on Sunday, June 28th. Next day, at visit, stated that he had caught cold on the previous Friday, after bathing, and on the Saturday felt himself unwell, with pain in the chest and cough, to which he had never been subject ; the expectoration is rusty and adherent ; the percussion, posteriorly, on the right side, is dull from the top of the lower third of the scapular region downwards ; anteriorly, the sound is on the same side tympanitic, from about the centre of the mammary region downwards, elsewhere normal ; the respiration is vesicular, except over the dull portion, where a fine crepitating râle is heard, followed by bronchial expiration ; the pulse is full and accelerated ; skin hot and dry ; tongue moist. (*Phospor. the third dilution, four times daily.*) 30th.—The dulness on percussion extends posteriorly as high as the centre of the scapular region ; laterally the infralateral and lower half of the lateral region are dull ; anteriorly, the dulness extends nearly as high as the centre of the mammary space above ; for the distance of rather more than one intercostal space the sound is tympanitic, gradually fading into the normal ; elsewhere it is normal ; the respiration over the dull portion posteriorly is bronchial ; anteriorly and elsewhere

vesicular ; in the lateral region the one passes into the other by means of an intervening undecided respiration. *July 1st.*—Posteriorly, from the centre of the scapular region to the top of it, the sound is to-day tympanitic, otherwise as yesterday ; the bronchial respiration extends now as high as the top of the scapular region ; anteriorly and inferiorly over the dull portion there is no respiration audible ; the expectoration is more copious, looking like a dark brown jelly ; tongue moist ; pulse quiet, and skin more cool. *2d.*—Physical signs as before, with the addition of a friction-sound at the lower border of the right scapular region ; laterally it is inaudible, but anteriorly it is again met with about the centre of the mammary space, where the respiration, on auscultating from above, begins to vanish ; the expectoration is still rusty and blood-streaked. *3d.*—Expectoration copious, more catarrhal, being simple mucus, with a few blood-streaks ; posteriorly a mucous râle, by which the friction-sound is masked, anteriorly it is still audible ; otherwise condition the same. *4th.*—Percussion-sound is posteriorly a little clearer ; on auscultation there a cooing sonorous râle is first heard, followed by a fine crepitating râle ; anteriorly the friction-sound has disappeared ; expectoration still copious, mucous. *5th.*—Percussion-sound posteriorly good, anteriorly beginning to clear ; posteriorly the respiration is vesicular, with a few crepitating râles. He continued to improve till the 9th, when the vesicular respiration anteriorly began to be heard, the percussion-sound being much improved, but not entirely normal ; a little crepitation is still to be heard posteriorly ; cough and expectoration slight. *10th.*—The vesicular respiration is everywhere restored. *11th.*—The percussion is to-day everywhere normal ; the sole remnant of disease being a few crepitating râles still audible on the right, posteriorly and inferiorly. On the 12th he was discharged.

CASE XIV.—E. B., a delicate-looking woman, aged 20, of a clear complexion and nervous temperament, admitted

on Sunday, June 21st. On the Monday following, at visit, she stated that she had been unwell for about four days, with feverishness and pain in the chest. She had for some weeks latterly been troubled with a cough, which had within a short time almost entirely ceased, but when it did come, pained her more than ever. The expectoration is rusty and scanty ; skin natural, and pulse but slightly accelerated ; percussion, anteriorly, dull over right subclavian space, where even the slightest pressure pains her, elsewhere normal ; posteriorly, on the right side, superiorly, dull as far down as the centre of the scapular space, elsewhere normal ; respiration is anteriorly vesicular ; posteriorly, over the dull space, bronchial ; beneath it on the right side are numerous mucous râles ; on the left, vesicular. (*Phosphor. third dilution, four times daily.*) 23d. —Percussion as yesterday ; to-day, over the dull superior portion of the right scapular region a fine crepitation is heard on inspiration, followed by bronchial expiration ; the mucous râle is to-day audible anteriorly as well as posteriorly ; the expectoration is still rusty, adherent, and scanty. 24th.—State the same. 25th.—Pain much relieved ; percussion unchanged ; posteriorly, over dull portion, crepitant râle followed by bronchial expiration ; anteriorly superiorly over dull portion consonating mucous râle ; inferiorly, anteriorly and posteriorly, on the right, mucous râle ; expectoration more mucous, still scanty. 26th.—Percussion anteriorly as before ; posteriorly the dulness extends over rather more than two-thirds of the right scapular and interscapular spaces, including also the acromial ; on auscultation a consonating mucous râle is heard posteriorly over dull space ; inferiorly, on the right, there is a mucous râle, which is also heard anteriorly, and occasionally over the left side ; expectoration more copious, frothy, mucous, mixed with rusty and yellow tougher pieces ; tongue red, but moist ; pulse more accelerated, rather feeble ; skin hot and dry. 27th.—The dulness and consonant râle extend to-day over entire right scapular and

interscapular spaces ; anteriorly the percussion over the superior portion of the mammary space is slightly tympanitic, otherwise as before ; the auscultation on the right as yesterday ; on the left side the quantity of mucous râle is greatly increased, and the thrill caused by it quite perceptible to the touch ; tongue posteriorly coated, with a red point, inclined to be dry ; pulse small and accelerated ; expectoration as yesterday, but not so copious ; troubled with disagreeable dreams and startings from sleep by night. 28th.—Physical signs much the same ; expectoration more copious, thin, frothy, mucous ; pulse not so fast, and scarcely so thready in character ; the skin is cooler and moist ; the tongue moist. 29th.—Percussion as before ; over the lower half of the right scapular and interscapular region a crepitating râle is audible ; superiorly a consonating, and inferiorly a non-consonating mucous râle ; a quantity of mucous râle audible anteriorly and over the entire left side ; the expectoration copious and mucous. 30th.—Still improving ; skin cool. *July 1st.*—The dulness is now clearing off ; posteriorly, on the right side, mucous râle without consonance ; anteriorly, and over the entire left side, nothing audible but vesicular respiration ; expectoration still copious. 2d.—As yesterday, with exception of a fine friction-sound to be heard about the centre of the right scapular space. She continued improving in every respect till the 5th, when the dulness anteriorly was quite gone, posteriorly but slightly perceptible ; a fine crepitating râle is heard over the top of the right scapular space ; the friction-sound is gone, having only been audible for two days ; the respiration is everywhere vesicular. 7th.—The chest sounds everywhere normally on percussion ; the respiration is everywhere vesicular, accompanied over the superior portion of the right dorsal region by a few mucous râles, which, by the 9th, had, along with the cough and expectoration, entirely disappeared. The medicine was then stopped. She was allowed to sit up for half an hour daily, and continued

gaining rapidly in strength till the 12th, when she was discharged.

CASE XV.—A stout-looking young man, of about 25, admitted on Friday, July 10th. At visit, the same day, stated that two days ago, without known cause, he had been seized with pain in the right side, cough and feverishness; he has always previously been healthy, and never subject to cough; he has, he says, within the last day or two, expectorated a small quantity of blood; the expectoration is to-day scanty, frothy, mucous, with a streak or two of blood; the percussion anteriorly normal, posteriorly, on the right side, dull over the acromial and upper half of the scapular regions; the axillary and upper portion of lateral region on same side are also dull to about their vertical centres; on the left side normal respiration; posteriorly over entire right side, and laterally over dull portion fine crepitating râle; elsewhere vesicular; pulse not much accelerated. (*Phosphor. third dilution, four times daily.*) 11th.—Right side posteriorly dull over entire surface; otherwise percussion as yesterday, inferiorly and posteriorly on right side; a fine subcrepitant consonating râle over the superior portion of scapular and acromial regions on same side; sonorous râle with occasional bronchial respiration, which is likewise heard over the right axillary and superior portion of lateral regions; left side normal; sputa rusty and scanty. 12th.—Percussion posteriorly as before, laterally clearing off; posteriorly, over dull side, mucous consonating râle; crepitation laterally; sputa rusty; pulse quieter; bathed in a copious perspiration. 13th.—Skin cool, and still moist, but not perspiring so much as yesterday; physical signs unchanged; sputa mucous. 14th.—Percussion-sound clear anteriorly and laterally, posteriorly clearing; sputa mucous and scanty; respiration everywhere vesicular, with an occasional râle where it was formerly dull. 15th.—Percussion-sound everywhere normal; an occasional crepitating râle to be heard over the right side posteriorly; re-

spiration everywhere vesicular. 16th.—The crepitating râle is to-day only audible on very full inspiration ; the cough and expectoration almost entirely gone. Discharged on the 17th.

CASE XVI.—J. H., a stout boy of 10, admitted on the afternoon of Monday, July 13th. Stated next day, at visit, that he had been, previous to admission, only one day unwell. The sputa are few and rusty ; cough not very troublesome ; pulse full and accelerated ; tongue coated, but moist ; percussion posteriorly on the left side dull, right normal ; over the left lateral and axillary regions tympanitic ; anteriorly, on the left, slightly dull, elsewhere normal ; respiration, posteriorly on the left, bronchial, elsewhere vesicular. (*Phosphor. third dilution, every third hour.*) 15th.—His condition was unchanged. 16th.—Percussion is to-day dull over the right axillary and lateral regions, otherwise unchanged ; over this dull portion bronchial respiration is heard ; the auscultation is otherwise unchanged ; the pulse is quieter. 17th.—The expectoration is to-day more catarrhal ; on the left posteriorly the bronchial respiration is not so decided. 18th.—Percussion on the left posteriorly still dull ; laterally and anteriorly tympanitic ; respiration posteriorly on the left is vesicular, preceded by a sonorous râle ; on the right laterally, rough, vesicular, puerile, and elsewhere normal ; expectoration trifling. By the 21st the vesicular respiration was audible over the entire chest, and but a slightly-perceptible dulness remained on percussing the left side posteriorly, which by the 23d had, along with the cough and expectoration, entirely disappeared. On the 25th his medicine was discontinued, and on the 1st of August he was discharged.

CASE XVII.—J. L., a stout boy of 16, admitted July 24th. Stated that he had been ill one day with pain in the chest and slight cough ; the expectoration is very scanty, yellow, and rusty, with a few streaks of blood, adherent ; percussion anteriorly normal, posteriorly normal, except the inferior



portion of right side, beneath the centre of the scapular space, where it is dull ; and over this dull portion is heard on inspiration a subcrepitant râle followed by bronchial expiration ; elsewhere the respiration is normal ; the pulse remains quiet ; tongue moist, and skin natural. (*Phosphor. third dilution, every third hour.*) 25th.—The râles are to-day more numerous, almost masking the bronchial expiration ; the expectoration copious, of a brownish dirty-looking jelly. 27th.—There is to-day a mucous râle over the left side also ; the physical signs otherwise unchanged ; the pulse has become somewhat accelerated. 28th.—Anteriorly the percussion is dull on the right side, beneath and over the lower third of mammary region, also over the right infralateral and lower portion of the latter ; a consonating râle is audible over dull space anteriorly and posteriorly ; elsewhere vesicular respiration and mucous râles are to be heard ; skin hot ; expectoration as before. 29th.—Percussion-sound is anteriorly dull over entire mammary region, superiorly over right subclavicular, somewhat tympanitic ; the respiration as formerly ; the expectoration scarcely so copious ; tongue red, inclined to be dry. 30th.—The percussion improved to-day posteriorly ; the râle no longer consonates ; the pulse is quieter ; the skin moist and cool ; tongue clean. 31st.—Physical signs unchanged ; the expectoration is scanty, colourless mucus ; pulse quiet ; cough not so troublesome. *August 1st.*—Percussion posteriorly clear, anteriorly improved ; respiration rough, vesicular, puerile, over what was the dull posterior portion, and anterior also ; expectoration mucous, still streaked with blood. 3d.—The percussion is to-day still slightly dull anteriorly ; vesicular respiration ; cough almost gone, and expectoration scanty. 4th.—Discharged.

To the foregoing must be added two other cases, of which I have not full notes, viz. :—

CASE XVIII.—A. S., a male, aged 21, admitted May 2d. (*Phosphor. fourth dilution, four times daily.*) Discharged cured after 18 days' treatment.



CASE XIX.—F. O., a male, aged 23, admitted 9th May. (*Phosphor. third dilution, four times daily.*) Discharged cured after 12 days' treatment.

These cases of Pneumonia give an average age of 24, an average treatment of 12·6 days, and a mortality of 15 per cent, 3 out of 19 having died.

Skoda's cases of Pneumonia, during the same time, amounted to 45, his deaths to 3, giving an average of 6·6 per cent.

During this period no bloodletting of any kind was used in Dr Skoda's wards, his treatment being, extract. graminis ʒj. or nitri puri, or sublimat.  $\frac{1}{4}$  gr., by way of attempting to reduce the plasticity of the blood. He also gave occasionally pulv. Dover. gr. vj. in the course of the day. I regret that from the patients tiring of one medicine, in no case during these three months did I see a case treated solely with extract. graminis; but hundreds could be extracted from his books treated solely with nitri puri gr. v. ad. gr. xx. This seems to be his favourite remedy, though at present he is trying the new chemical theories, and gives the patients sublimate. His average mortality for the last three years, during which no bloodletting—or most rarely—has been performed, and not one leech or cupping-glass applied, is 13·7 per cent, and the recovery of the patients has always been very speedy. He told me that in the year 1840 he treated 64 females, affected with pneumonia, with large bleedings and large doses of tartar emetic, and only lost one; yet the deaths amongst the males the same year made the total deaths amount to 1 in 8. He considers that this is about the general proportion under all treatments. The great advantage of not bleeding he considers to be the speedy recovery. The average age was 25·3.

#### OTHER DISEASES.

During the above period there were eleven cases of TUBERCULOSIS admitted. They were treated chiefly with

*sulphur* 4. Two died and two were left in the house ; the others were discharged, some of them a little relieved.

Five cases of CATARRH and two of BRONCHITIS were also admitted ; one of the latter following measles. They were treated chiefly with *sulphur, fourth dilution*, and, where the fever ran high, with *aconite, third or fourth dilution*.

Two cases of GENERAL SPASMS (at least complained of) were treated—the one with *chamomilla, sixth dilution, twice daily*, the other with *ignatia, sixth dilution, once daily*. They both recovered.

One case of CHOREA was treated with *ignatia, third dilution, three times daily*, and was discharged relieved.

Three cases of enlarged SCROFULOUS GLANDS were received and discharged, two *in statu quo*, one after suppuration.

One ASTHMATIC AFFECTION, without apparent cause, except hysteria, in a young girl, aged 18, was treated with *ammon. carb. third dilution, four times daily*, and was cured.

A case of GOITRE was treated with *iodine, second dilution, four times daily*, and was discharged in five days ; the breathing somewhat relieved.

One case of VARIOLA MODIFICATA ran its course regularly without any medicine at all.

One case of ICTERUS, of three weeks' standing, was discharged cured after twenty days treatment with *china, second dilution, three times daily*.

Six cases of ANGINA TONSILLARIS, slight ; treated with *belladonna, third, fourth, and sixth dilutions, three times daily, and hydrargyrum, second and third dilutions, four times daily*. Average treatment not three days.

One patient with CATARRHAL OPHTHALMIA got on her entrance *sulphur, the third trituration, four times daily*, but the following day was not to be seen, so I suppose had been quietly discharged.

One case of OLD AGE, dead.

One case of GENERAL DROPSY, discharged after five days' treatment with *lactuca, third dilution, four times daily*. Improved slightly.

One case of EXUDATION IN THE PERITONEUM in a young boy aged 12. The effusion was absorbed during the employment of *bryonia*, the *third dilution*, *four times daily* : it was followed by an inflammation and suppuration of the tunica reflexa, and the case was left under treatment.

Two cases of EFFUSION INTO THE PLEURA were discharged unimproved.

There were in all seventy-one cases in which the patients got no medicine, including several surgical cases—as ulcers, injuries, etc.—and one case of burn, which was treated with a turpentine lotion. The other cases were CHLOROSIS, HEADACHES, slight STOMACH COMPLAINTS, EXPECTORATION OF BLOOD—in one case caused by a blow, in another, by hypertrophy of the heart.

But I must now conclude my narrative, incomplete and imperfect as it is. I hope you will excuse the hasty manner in which it has been drawn up, from consideration of the circumstances under which I write. I was anxious to send off my letter before leaving Vienna (which I do to-morrow, August 15th), and I thought you would rather have my account, even in a rough form, early, than in a more digested form at a later period. I possess a complete list of all the patients admitted into the hospital during the three months, a statement of the medicines administered, the length of the treatment, and period of residence in the hospital, etc., which I hope to transmit to you.

I think you will see by what I have stated that the strength of the homœopathists lies not in the greater rationality or practical superiority of their treatment, but is founded on the weakness of allopathy ; that they not only do not help their patients, but—if they are strict homœopaths—are for ever shut out from helping them ; that in their treatment of acute diseases—simpler, at least, if not better than that of their opponents—their success depends entirely on the hitherto unrecognised powers of Nature—all the magic influence of their infinitesimal

doses of phosphorus, etc., being emulated if not excelled by the heroic virtues of *extractum graminis*.

I remain, my dear sir, yours faithfully,

GEORGE W. BALFOUR.

REMARKS by the late Sir JOHN FORBES, M.D.,  
F.R.S., etc.\*

The preceding Report may be truly said to speak for itself, yet it may not be inexpedient to advert to a few of the more important particulars contained in it, especially those which bear most pointedly on the main questions to which this part of our Journal is for the present devoted.

1. In the first place, it seems clearly made out, from Dr. Balfour's account—confirmed and corroborated as it is in this point by Dr. Mühry's letter†—that what is now called Homœopathy is far from being, either in principle or practice, always or necessarily the system first promulgated by Hahnemann under this name. We think it evident, from Dr. Balfour's cases, that even Hahnemann's avowed follower Fleischmann sets little store by the fundamental principle, *similia similibus*, in the administration of his remedies.

2. Secondly, the facile and uniform attainment of the same triumphant results under all these varieties of the homœopathic system, points to the operation of one and the same curative agent in all—namely our old friend the *vis medicatrix*.

3. The great and manifold divisions already existing among the homœopaths seem to lead irresistibly to the conclusion that the beginning of the end of homœopathy is already come. If we have the very best authority for believing that a house divided against itself cannot stand,

\* Editor of the *British and Foreign Medical Review* at the time the foregoing report was published in it.

† *Op. cit.* p. 565.

we can hardly doubt that the house of Hahnemann is now tottering to its fall.

4. It is sufficiently evident from many passages in the Report that, whatever might have been the comparative general result of adopting the ordinary (allopathic) treatment in the cases related, its adoption would have been decidedly advantageous in particular instances, by affording aid to Nature in relieving distressing symptoms, which were not relieved, nor attempted to be relieved, by the homœopathic treatment. Whether homœopathy be true or false, there can be no doubt that Dr. Fleischmann's treatment was often bad.

5. But whatever may be thought of homœopathy as a doctrine, or as a general system of practice, it will not be doubted, after this Report, that the more common acute diseases may and can, during a certain period of time at least, run their course favourably enough under its administration. The general results of the treatment during the three months reported of were, we think, such as would have satisfied many practitioners of our ordinary medicine.

6. Neither will it any longer be denied that PNEUMONIA, even in a severe form, may, under homœopathic treatment, pass through all its stages to perfect recovery.

7. The great and important practical question is—Whether or not the homœopathic remedies administered in these cases contributed in any degree—or if in some degree, in what degree—towards the cure of the diseases, particularly the cases of pneumonia? This is a question which will be answered differently by different persons. No doubt, Dr. Fleischmann and homœopaths generally will regard these cases not only as highly favourable to the claims of homœopathy, but as unquestionable proofs of its great remedial powers. We, on the contrary, in common with our reporter, see no other powers operating in these cases but the natural powers of the living system, called into action under very favourable circumstances. The

general aspect of the whole cases, favourable and unfavourable alike, and the minute details of each case, convey to our mind the most perfect conviction that throughout, Nature, not art, was the worker ; and it would seem easy to convey to others the grounds of this conviction by a minute analysis of the individual cases through their whole progress, whether the patients were getting better or getting worse, whether taking or omitting the homœopathic medicaments.

8. The same doubts as to the efficacy of the medicines employed may exist in regard to the cases of Professor Skoda. But if the advocates of homœopathy insist on the value of the evidence in favour of the decillionths of phosphorus, aconite, or bryonia, they surely have no right to reject the evidence of a precisely similar kind in favour of Dr. Skoda's grain doses of the *extractum graminis* or nitre. We may perhaps be forgiven even by the most zealous partisans of ordinary medicine, particularly the abettors of the heroic system, for setting down both systems as equally effective in the case in question—that is, as having no effect at all.

9. The results of the treatment of the cases of pneumonia, both by Fleischmann and Skoda, seem to prove that bloodletting is not so essential and indispensable a remedy, even in severe cases of pneumonia, as has usually been supposed ; and that its omission, in a certain proportion of cases at least, does not even retard the period of convalescence or the completion of the cure.

10. The materials supplied in Dr. Balfour's Report, like those formerly supplied in Dr. Fleischmann's, do not in any degree authorise the general conclusion that homœopathic treatment is as good as that of ordinary medicine, much less that the latter, like the former, is valueless—Nature being all-sufficient in the cure of diseases ; but both go powerfully to corroborate the following, among other important inferences formerly deduced by us from a review of the whole question—viz. 1. That Nature is

more powerful in curing diseases, and has practically a much greater share in the ordinary cure of diseases, than is commonly believed. 2. That the prevailing doctrines respecting the actions and powers of many particular medicaments and other so-called remedial agents, require reinvestigation with a view to ascertain the truth. 3. That while this investigation is in progress, we should be cautious, even timid, in the use of medicaments and other medical means capable of exerting a powerful influence on the animal system, and therefore capable (possibly) of doing evil as well as good. 4. That in the present state of our knowledge, the Hygienic—Eclectic—Hippocratic—Natural system of treating diseases, is the only one that can be justified or safely followed.

THE END.











